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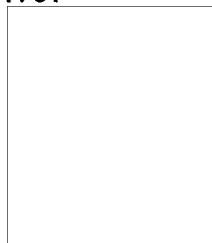
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THE WORKS
OF THE INSTITUTE
OF INFRAMICROBIOLOGY
OF THE R.P.R. ACADEMY

(ABSTRACTS)

1949—1961



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THE WORKS OF THE INSTITUTE OF INFRAMICROBIOLOGY

OF

THE R. P. R. ACADEMY

(Abstracts)

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INTRODUCTION

The abstracts of the investigations of the Institute of Inframicrobiology of the R.P.R.Academy in its 13 years activity, is both a summation of the persevering work, carried out by the research workers of our Institute and a homage brought to those who have helped to obtain these results.

They also reflect the wish that the works of the Institute should be known by specialists at home and abroad, by all those who are interested in our speciality.

However, in the first place, we should like to express by this publication, our sincerest thanks to the Rumanian Workers' Party and Government, that fully understood the importance of inframicrobiology, already 13 years ago, and created and endowed the Institute we are now working in; that have moreover decided to develop and build a new institute, which will be very soon ready; that have given us immense possibilities for fruitful researches, that have brightened our work and life as investigators in the unknown world of virology - a thrilling work in itself-, that have honoured us by entrusting us with new tasks, when the first medical problem was stated in the directives of the IIIrd Congress of the Rumanian Workers' Party : the problem of viral diseases.

Our institute, the only large unit for the study of virology in the country, has assumed the task of an authority in the methodology of our speciality, of a center for graduate and specialization teaching and, in answer to the various appeals of the tutelary bodies, of the obligation to investigate the most varied problems. It is for this reason that the number of problems and themes studied

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is relatively great.

In the 13 years of its existence, in the Institute of Inframicrobiology staffs of specialists have been trained, instruction has been given and research work has been carried out; research destined to bring its contribution to science in the country and abroad. Science has been linked to practice by the help given in the field in the control of viral diseases and for the improvement of public health; useful ideas on virology have been broadcast by lectures, articles, papers and booklets.

Fundamental scientific research, this reserve of future technique as it is called by Lenin, is our principal aim, of all those working in the institute. Research however has never been separated from practical applications. It is true that many works have been published concerning results obtained in problems initiated by us (ultrafiltration, megamononucleosis, synchronophyllaxix, septineuritis, hydropigenous neurovirosis, tissular immunity, paraimmunity, the biophytic state, viral oncolysis, metallized viral vaccines, the plurality and variability of the hepatitis virus, etc.), or in problems that have long been studied (cellular inclusions, inframicrobial histopathology, vaccinia, rabies, poliomyelitis, herpes, inframicrobial variability, etc.), or, more recently, (the viral etiology of cancer, Coxsackie, psittacosis, A.P.C., ECHO, interferons, in vitro cell cultures, electrophoresis, chromatography, electron microscopy, labelled atoms, Pavlovism in virology, cytochemistry, biochemistry, viral biosynthesis, ionizing radiations, etc.), but it is none the less true that in view of the actual requirements of medicine in our country, we have been constantly preoccupied by the applications of science as demanded by our governing bodies.

We shall recall the vaccines studied against 14 human or animal viral diseases : small pox, swine plague, avian plague, fox encephalitis, avian diphteria-variola,

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hydropigenous neurovirosis, influenza, psittacosis, rabies, mumps, Aujeszky's disease, lymphocytic meningitis, foot and mouth disease, tick-borne encephalitis; another two vaccines are under study: APC and anti-measles vaccines. Some of these are already widely applied in the population or for the immunization of animals and birds.

Numerous diagnostic tests for viral diseases, some of which original, may likewise be mentioned. Instruction given in the field in various centers, to a great number of doctors, in view of the application of these tests, has likewise been one of our objects. Hundreds of work-days have been spent, at the demand of the Ministry of Health and Public Welfare, in order to come in aid to epidemiologists. Two of our units, at the Colentina Hospital and Hospital of Contagious diseases no.2, perform diagnostic tests and virus isolations from patients.

The isolation and identification of viruses in clinics or in field work have made evident for the first time in our country the etiologic agents of certain human or animal viral diseases : ECHO, APC, tick-borne encephalitis virus, pneumonia, fox encephalitis, epizootic abortion, pneumonia of calves, ornithosis, recurrent meningitis viruses and the agents of various human and animal neorickettsial affections, etc.

The scientific works of the investigators of the Institute, numbering about 600, deal with general and special virology, in which 24 human viral diseases and 13 animal and insect viral diseases are studied: herpes, vaccinia, rabies, sueta miliaris, epidemic hepatitis, lymphocytic meningitis, measles, German measles, poliomyelitis, influenza, encephalitis, atypical pneumonia, parapoliomyelitis MM, Coxsackie, mumps, infectious mononucleosis, infantile infectious lymphocytosis, neorickettsial pneumonia, recurrent viral meningitis, ornithosis, tick-borne encephalitis, adenoviral and ECHO infections, malignant lymphogranulomatosis, moluscus contagiosum; fowl plague, swine plague,

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fowl pox, distemper, Newcastle disease, clavelle, Aujeszky's disease, fox encephalitis, canine hepatitis, swine enzootic pneumonia, anemia of horses, hydropigenous neuroviroses of fish, jaundice of silk worms.

In epidemic hepatitides, one of the most important contributions is the fact the plurality of viral hepatitides has been established by the description of new forms, sclerogenous hepatitis and subsequently a hepatitis due to virus NHA. In the course of the investigations carried out, inclusions characteristic of Botkin's disease were discovered, as well as the topography of the virus in the hepatic cell (St.Nicolau, R.Portocală et al.); the electrono-optical morphology of the sclerogenous virus was established (St.Nicolau et al.), its hemoagglutinating properties (N.Cajal et al.), serologic differences between the sclerogenous and Botkin's virus (St.Nicolau et al.), the distribution of the sclerogenous virus in the human organism (N.Cajal et al.), the duration of the elimination of hepatitis viruses from the organism and the presence of virus carriers (N.Cajal et al.); the "zone" phenomenon has been described and the non-specific factors that interfere in the hemagglutination and hemagglutino-inhibition reaction; it was possible to isolate and maintain in serial passages the sclerogenous and Botkin's virus in embryonated eggs (St.Nicolau et al.); detailed morphologic studies were carried out establishing the general character of the viral disease (St.Nicolau et al.); different biochemical aspects of the affection were studied (R.Portocală and V.Boeru); serum aldolase was determined and its diagnostic value established even in the unapparent forms (N.Cajal et al., D.Mitroiu et al.); a comparative critical study of the various diagnostic tests were performed (N.Cajal et al.); hepatic and muscular aldolase was determined (P.Athanasiu and N.Cajal); the diagnostic value of the A.V.B. test and agglutination of Rhesus and chick red blood cells in this viral disease (G.Balmuş and D.Mitroiu); interesting epidemiologic studies were also carried out (St.Nicolau, G.Marinescu, N.Constantinescu, N.Cajal, etc.)

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Spontaneous variability of hepatitis viruses under natural conditions was demonstrated and the plurality of the epidemic hepatitis was interpreted in the light of this variability (St.Nicolau and N.Cajal); certain strains, that appear to have etiologic relationships with this viral disease, were isolated in cell cultures (D.Mitroiu and co-workers); a study was carried out on the relationship between canine and human hepatitis (Surdan et al.), and murine hepatitis viruses (N.Cajal et al.) etc.

Most of the results of Rumanian investigations in the field of epidemic hepatitis are summed up in two monographs published by the R.P.R. Academy. Numerous works have been published in the periodicals at home and abroad.

For the results obtained in the field of epidemic viral hepatitis, the 1 Class State Prize of the R.P.R. was awarded in 1953; and for special biochemical studies in this connection, R.Portocală received in 1957 the "V.Babeş" Prize of the R.P.R.Academy.

Recently, at the International Congress of Infectious Pathology in Milano, we had the satisfaction to find that our conception on epidemic hepatitis, concerning the plurality of the virus and its variability in natural conditions, have been accepted by all the specialists in this field.

In influenza and other viral diseases of the respiratory tract, various influenza virus strains isolated in the country since 1953 and up to date were investigated (A. Derevici et al.); the dynamics of hemagglutination-inhibition antibodies were studied in the population, thus confirming the data regarding the variability in nature of this virus (A. Derevici et al.) An efficient ovovaccine was prepared in a close-circuit apparatus, specially devised in the Institute and successfully applied in the field (A.Derevici); a diagnostic test based upon the precipitation phenomenon was developed (A.Derevici and N.Drăgănescu).

A study was carried out on cytologic diagnostic methods of the Koeleaditzkaia or Panthier type (Al.Bronitki)

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and a critical experimental study on diagnostic tests (D.Sărațeanu and N.Drăgănescu). Epidemics due to virus A (Asia) were described (A.Derevici et al.); for the first time in the country, influenza virus type D was isolated (D.Trarchilă et al.). Modification of the influenza virus was obtained by vegetative cross-cultures with other viruses, especially neurotropic viruses (P.Stroescu, Al.Petrescu); cortical dynamics in the course of anti-influenza vaccinations in man and animal and circulatory and respiratory changes in the course of the disease was studied (L.Mîrza et al.). The role of the influenza virus in the etiopathogeny of the cortico-septic syndrome in infants was demonstrated (N.Cajal et al.); the action of embryonic fluids on the influenza virus was established (N.Cajal and M.Cepleanu); investigations were carried out on the experimental disease in animals with gonadic hypoactivity (C.Baba and N.Cajal); investigations were done on influenza virus cultures in the deembryonated egg (M.Cepleanu, Y. Copelovici); anti-influenza immunity in animals previously infected with the vaccinia virus (D.Sărațeanu and B.Fuhrer); influenza morpnopathology in the suckling mouse (G.Marinescu et al.); the virus in non-epidemic periods and isolation of a virus with neurotropic properties (Al.Bronițki et al.); interference between various influenza viruses (G.Danieliescu); evolution of the experimental disease in Largactyl-treated mice (N.Cajal et al.). From cases of swine influenza, influenza virus type A was isolated, demonstrating the role of these animals in the spread and maintenance of the influenza infections (N.Cajal and M.Taga); serum antibodies were studied by microelectrophoresis (R.Portocală and V.Boeru); interesting research work was carried out on replication of influenza virus, obtaining biosynthesis of the viral elementary bodies following introduction in the embryonated egg or purified ribonucleic acid extracted from the influenza virus (R.Portocală et al.); the electronic aspect of the virus thus obtained was described

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(R.Portocală et al.); the action of ribonuclease on influenza virus multiplication (Y.Copelovici and M.Cepleanu); the physical mixture of two virus types was described, thus explaining the mixt virus (R.Portocală); the action of vitamins C, PP and B was studied (G.Popescu); interference and the mechanism of action of interferon (G.Danielescu); the allergic factor in influenza (A.Derevici et al.). The neutralizing action against the influenza virus of bee' royal jelly was discovered (A.Derevici et al.); diagnostic sera and antigens were prepared (A.Derevici); new type of virus that produces a disease similar to influenza, the Boto virus, was isolated (Al.Petrescu et al.); the action of ionizing radiations on influenza and HI antibodies was investigated (O.Burducea and M.Cepleanu); etc.

For the first time in the country, APC viruses were isolated and investigations were carried out on the alterations produced by these viruses in human embryo cells (I.Aderca and M.Ianconescu) and on anti-APC antibodies in the population (A.Derevici and co-workers; M.Gruia and co-workers).

The infectious role of DNA extracted from APC virus was established (R.Portocală et al.); the sensitivity of different cell types to these viruses was studied (L.Predescu and co-workers).

It is likewise for the first time that germs of the ~~G1~~ ~~rod~~ neorickettsial group were isolated in the country and studied in the electron microscope (D.Sărațeanu et al.); these germs were transmitted to the cotton rat (N.Drăgănescu, D.Sărațeanu); ocular lesions produced by neorickettsias (G.Marinescu) were described for the first time in the country, psittacosis pneumonias were detected (D.Sărațeanu et al.) and numerous ornithosis strains were isolated from man and different animal species following epidemiologic and epizootologic surveys (D.Sărațeanu C.Surdan et. al.); a metallized vaccine was prepared, as well as antigens and diagnostic sera (D.Sărațeanu et al.); the etiologic correlation between these germs and various cases of cardiovascular diseases was studied (St.Nicolau et al.), etc.

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As regards the role of rickettsias and pararickettsias in the etiology of certain human diseases, our investigators have shown the role of these germs in the etiology of certain cardiovascular affections (infarction, arteritis, migratory phlebitis, etc.) (St.Nicolau, C.Surdan et al.), gastric ulcer (S.Nicolau, Al.Petrescu et al.), infantile pneumoencephalitis (N.Drăgănescu et al.), certain chronic respiratory affections (pulmonary sclero-emphysema, chronic bronchitis, bronchiectasis, etc.), the pathology of pregnancy, mortinatality and congenital malformations (N.Cajal, C.Surdan et al.); therapeutic investigations with antibiotics of the tetracycline group have yielded important data, which on the one hand confirm the rickettsial or pararickettsial etiology of these affections, and on the other, open wide prospects in the prevention and therapy of these diseases, that constitute an important problem of public health.

Rumanian investigation on influenza were synthesized by A.Derevici in her monograph "Gripa" aspecte din problema (Influenza - aspects of the problem), published by the R.P.R.Academy, those concerning ornithosis will appear in a monograph written by D.Sărățeanu, and those on adenoviruses in a monograph by A.Derevici, in the press.

Field activity and investigations during the influenza epidemic of 1958 have been summed up in the volume "Gripa, date asupra epidemiei din 1959 (Influenza - data on the 1959 epidemic), published by Editura Medicală.

In rabies, the comparative action of various antirabies vaccines was studied (N. Constantinescu et al.); a vaccine was prepared with a fixed methylic alcohol attenuated virus, suspended in mineral oil (S.Nicolau et al.); "closed rabies" and the important role of this notion in the prophylaxis of rabies were described (S.Nicolau and N.Constantinescu); the priority of V.Babeș in the discovery of rabies inclusions - the Babeș-Negri bodies - was established (St. Nicolau and M.Babeș). Thus, inclusions have been described in the retina of naturally or experimentally infected animals (K.Portocală and N.Cajal), as well as in the carotid glomus

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(P.Athanasiau et al.); histopathologic studies of the nervous vegetative system in this viral disease have likewise been carried out (P.Athanasiau et al.); a rapid method of diagnosis by the phase contrast microscopy was developed (N. Cajal and S.Mateescu); cases of rabies with a long incubation were studied (S.Nicolau et al.); the part played by medicinal and reflex sleep in the evolution of this viral disease (S.Nicolau et al.); the early onset of rabies detected by means of conditioned reflexes (L.Mirza et al.); the unapparent disease in the course of antirabies vaccination detected by means of the method of conditioned reflexes (G.Danielescu et al.); the role of cortical reactivity in the course of anti-rabies immunization (N. Cajal and G. Popescu); the important part played by association of immune serum in the prophylaxis of rabies (N.M.Constantinescu et al.); inclusiogenesis in animals subjected to the action of ionizing radiations (S.Mateescu); "the law of intervals" applied to anti-rabies immunization (N.Constantinescu et al.); the comparative immunogenic value of the Flury strain and the glycerophenol treated vaccine was studied (L.Pascu et al.); a silvered active vaccine was prepared (St. Nicolau et al.) and dissemination in the organism of viral elementary bodies labelled with radioactive silver was followed up (Cl.Nicolau et al.); a new diagnostic test - the peritoneal test - was devised (S.Nicolau, N.Constantinescu et al.) and the following studies were carried out : the action of cortison, X-rays and isotopes on experimental rabies and antirabies immunity (N.Cajal), rabies in the hamster, the sensitivity of this animal in experiments with rabies virus (N.Constantinescu et al.) etc. Recently, St.Nicolau, N. Constantinescu and N. Cajal have published their monograph on Turbarea (Rabies) (The Publishing House of the R.P.R. Academy).

In poliomyelitis and related diseases, a detailed histopathologic study of the sensitive nervous system was carried out (St.Nicolau et al.); a histologic study on experimental

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poliomyelitis with the Lansing virus (El.Lissievici Oprescu); the poliovirus was cultivated in HeLa, Detroit 6 and human amnion cells and comparatively in human embryo cells (I.Aderca et al.); poliomyelitic myocarditis, hepatitis, nephritis and pneumonia were described (G.Marinescu et al.); the incidence of anti-Lansing antibodies was established in the population of Bucharest, and the origin and significance of these antibodies discussed (N.Cajal et al.). The idea of paraimmunity in herpes-poliomyelitis was developed (St. Nicolau and M.Ianconescu); a study was carried out in cell cultures on antibodies to the three poliovirus types, in the inhabitants of various towns and villages in the country (N.Cajal et al.); the evolution of antibodies in children vaccinated with Salk vaccine was followed up (N.Cajal et al.); electrophoretic modifications in vaccinated persons was studied (G.Marinescu et al.); the lesions produced by poliovirus in embryo and human amniotic cell cultures (I.Aderca and M.Ianconescu); for the first time the polio vaccine prepared in the Poliomyelitis Institute of Moscow with modified Sabin strains was applied in the country and elimination of the virus and serum tests were studied (N.Cajal et al.); the action of radioactive isotopes on type seroneutralization antibodies (O.Burducea); the poliovirus neutralization test was described (St.Nicolau et al.), etc. Numerous Coxsackie virus strains were isolated and the etiologic relationship with poliovirus studied; the aspect of the myofibrils of mice infected with the Coxsackie virus were investigated in the electron microscope (R.Portocală et al.); muscles extracts from Coxsackie infected animals (R.Portocala et al.); Coxsackie A₂ virus was transmitted to beta and gamma X-ray irradiated adult mice (N.Cajal and S.Mateescu). The first ECHO virus strains were isolated in the country (M.Gruia et al.; I.Aderca et al.) and investigations carried out on anti ECHO antibodies in children's communities in Bucharest (M.Gruia, Y.Copelovici) and HAI antibodies (M.Gruia et al.; G.Marinescu). ECHO virus strains

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were isolated from various cases of infantile enteropathies (M.Gruia et al.), etc.

Acad. St.S.Nicolau, acad.Al.Rădulescu, N.Cons-tantinescu, N.Cajal and G.Marinescu have drawn up a documented monograph containing foreign and Rumanian works in the field of poliomyelitis.

In herpes it was possible to transform the relapsing herpes virus into herpes simplex virus (St.Nicolau et al.); the characteristic lesions produced by herpes virus in the retina was studied (R.Portocală and N.Cajal); investigations were carried out on the experimental disease in animals with a modified reactivity of the cerebral cortex (N.Cajal et al.); the influence of vitamin C on experimental herpes in the rabbit (N.Cajal and C.Baba); the evolution of herpes in animals with aloxan-induced diabetes (C.Balmuş and N.Cajal); herpetic "diabetes" was described in rabbits (R.Portocală and N.Cajal); the relationship between herpes and poliovirus (St.Nicolau et al.); the evolution of experimental herpes under the action of cortisone (N.Cajal and G.Popescu), and gonadic hypo- and hyperactivity (N.Cajal and C.Baba); antiherpetic immunity in irradiated animals (S.Mateescu); virus isolation in cell cultures (M.Ianconescu et al.); the incidence of antibodies in the population (M.Ianconescu); lesions produced by herpes virus in human embryo cells (I.Aderca et al.).

In lymphocytic meningitis, numerous virus strains were isolated (A.Derevici et al.) and an ample clinical, epidemiologic, and experimental study of the disease and histiopathogenesis of the experimental disease was carried out (A.Derevici et al.). Comparative serologic studies were done, showing the best diluting fluid for experimentation with these viruses (N.Cajal and Y.Copelovici); studies were carried out on the etiology of meningitis cases hospitalized in Bucharest (M.Gruia et al.) and on methods of etiologic diagnosis (N.Cajal). A virus producing recurrent meningitis was isolated (N.Drăgănescu) and a monograph published on lymphocytic meningitis (A.Derevici).

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In encephalitis, several viruses were isolated and vast serologic and histopathologic studies carried out on various types of human encephalitis and especially tick-borne encephalitis (N.Drăgănescu et al.). In connection with this disease, the incidence of complement fixing antibodies in forest workers was followed up (D.Sărățeanu et al.) and a metallized vaccine developed (St.Nicolau et al.). Multiplication of the encephalo-myocarditis MM virus in tis-sular cultures was likewise studied (N.Cajal et.al.); an effi-cient metallized vaccine was prepared (St.Nicolau, N.Drăgănescu et al.)

In mumps, the viral elementary bodies were studied on smears obtained by puncture of the parotid glands and stained with phenic isamine (St.Nicolau and co-workers); the non-specificity of the inclusions found in the salivary glands was demonstrated (St.Nicolau et al.); numerous mumps virus strains were isolated in embryonated eggs from the cerebrospinal fluid of patients with the parotid or meningeal forms; comparative investigations on the value of serologic reactions were done; the behaviour of the virus in the embryonated and deembryonated eggs (M.Cepleanu); a vaccine was prepared with autochthonous strains, applied in the field (Y.Copelovici et al.) and the vaccines prepared according to various techniques were studied comparatively (Y.Copelovici and M.Gruia).

In Aujeszky's disease, epizootological and clinical investigations were carried out (C.Surdan et al.); the specific histopathology of the natural and experimental disease was studied in detail (St.Nicolau et al., C.Surdan et al.); adaptability of the virus to the chick embryo was investigated

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and attempts were made at preparing a vaccine with the culture virus (I.Suhaci et al.); an active hyperimmune serum was prepared experimentally (V.Tomescu et al.)

in fox encephalomyelitis, epizootological, clinical, experimental and histopathologic studies were carried out and a vaccine, currently applied, saved many breeders in fox breeding farms; the etiologic unity of fox encephalomyelitis and canine contagious disease was demonstrated and the relationship of this virus and human hepatitis viruses investigated (C.Surdan et al.)

In vaccinia, a new method for the improvement of vaccinia in lymph production was developed and the notion of epithelio-vaccinia and pyovaccinia were introduced (St.Nicolau et al.). Investigations were carried out on the cation of serum gammaglobulins in the immunization process (R.Portocală and N.Cajal). The influence of the vaccinia virus on the development of anti-Eberth antibodies, hemolysins and the body weight of experimental animals was studied (N.Cajal et al.); the evolution of vaccinia and antivaccinia immunity in the rabbit under the action of cortisone (N.Cajal and Y.Copelovici); the action of ionizing radiations on experimental vaccinia and immunity induced by this virus (S.Mateescu et al.); the influence of vitamin C and cortisone on vaccinia virus cultures in the embryonated egg (C.Popescu); investigations were made on the development of influenza HAI antibodies in animals previously inoculated with the vaccinia virus (D.Sărățeanu) and the morphologic aspect of the virus in the electron microscope (St.Dumitrescu and N.I.Ionescu).

In zona zoster, the morphology of the virus and histopathology of the skin lesions were described (St.Nicolau et al.) and the question of the unity or dualism of zona and varicella discussed.

In fowl pox an important contribution was brought by the investigations of the Institute to the immuno-biologic relationship between the various virus strains (V.Tomescu et al.) and the detailed study of specific inclusions. The

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vaccine prepared was currently and massively applied in the field. Detailed studies on specific inclusions were carried out (P.Athanasiu et al.)

In measles and German measles, the morphology of the virus was studied on smears stained by pueric isamine (St.Nicolau et al.); the morphopathology of post measles encephalitis was likewise investigated (G.Marinescu et al.) and German measles transmitted experimentally to the rabbit (N.Constantinescu et al.). Attempts were made to prepare an anti-measles vaccine with the virus inactivated by immune serum (St.Nicolau et al.), to this end comparative studies were carried out on the cultivation of various mumps virus strains in different cells, in vitro (I.Aderca and M.Cepleanu), - autochthonous strains were isolated (M.Cepleanu et al.) and vaccine now being prepared according to the Katz-Milovanovici formula (I.Aderca and M.Cepleanu).

In swine plague, the investigations had in view especially specific prophylaxis (V.Wynochradnyk, S. Mihăiță et al.; V.Tomescu et al.); the comparative value of vaccines adsorbed on aluminium hydroxide and those inactivated by crystal violet was investigated (S.Mihăiță et al.); the duration and intensity of immunity conferred by experimental vaccines were established; vaccines were prepared from organs other than those usually employed and a vaccine using lapinized virus was tested (S.Mihăiță et al.); the reversibility of the lapinized virus (L.Pascu) and the distribution of the vaccine virus was investigated (I.Gheorghiu).

The results of Rumanian investigations in this viral disease were summed up by I.Gheorghiu, S.Mihăiță and co-workers in a monograph published by the R.P.R.Academy.

For their important contribution to the problem of swine plague, V.Wynochradnyk was awarded the State Prize for 1954.

In avian pest and pseudopest, numerous virus strains were isolated and typed (C.Surdan et al., I.Suhan et al.); interesting immuno-prophylactic studies were conducted and specific vaccines were prepared and massively

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applied, with the best results throughout the country (S. Suhaci et al.); morphopathologic study of chick embryo lesions (Serbănescu et al.); an avian pest antiserum was prepared in turkeys (I. Suhaci et al.); histopathologic study of the nervous system in mice experimentally infected with an avian pest strain specially adapted to this animal species (R. Portocălă and N. Cajal); the investigations had in view a comparative study of the value of antipest vaccines prepared with live modified viruses (I. Suhaci et al.) and the distribution of the vaccine virus.

For his exceptional contribution to the problem of specific prophylaxis in avian pest, I. Suhaci was awarded the R.P.R. State Prize for 1954.

In the problem of viruses and tumors, an important contribution was brought to the following questions: the oncolytic action of certain viruses (St. Nicolaie, E. Nastac, B. Anagnoste), the correlation between viruses and cancer (S. Nicolaiu), the study of Ehrlich tumors, proving their viral etiology (E. Nastac et al.), the evolution of Guérin sarcoma in animals previously infected with the vaccinia virus (N. Cajal, E. Nastac), the combined oncolysing action of certain viruses and cytostatics or narcosis (O. Costăchel and E. Nastac); the action of certain chelating products on experimental tumors (G. Balmuş et al.).

An agent with double antigenicity was obtained by inoculation of adenovirus type 3 into Ehrlich's ascites carcinoma; the action of ribonucleic acid extracted from various viruses on several experimental tumors, was investigated.

In the problem of the viral etiology of human and animal leukemias, attempts were made at isolation of a viral agent from the blood and organs of animals or patients suffering from leukemia; the pathogenicity of murine leukemic products from AKm mice for the rabbit, guinea pig, mouse, was demonstrated; anatomo-pathologic lesions were described and their transmissibility by serial passages (E. Nastac, B. Anagnoste

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et al.); in human leukemia our investigators showed the pathogenicity of human leukemia products for the white hybrid mouse in which a serially transmissible disease with histopathologic modifications was produced (E.Nastac et al.). At the same time, studies were carried out in the electron microscope and on the evolution of experimental leukosis in animals irradiated with radioactive isotopes (N.Cajal et al.).

Two virus strains were isolated from cases of human reticulo-sarcoma; the disease transmissible in series in the embryonated chick egg was studied in the optical and electron microscope; elementary bodies were observed in lesions of the chorio-allantoic membrane (N.Cajal and M. Cepleanu).

In Hodgkin's disease, several agents transmissible in series were isolated in the embryonated egg, producing lesions at the level of the embryos and cytopathic effect in tissue cultures. Their reaction to physical, chemical and biologic agents suggests the viral nature of the isolated strains, that form the object of ample experimental morphologic and serologic investigations (A.Schächter, N.Cajal, M.Cepleanu and Y.Sorodoc).

Acad. St.Nicolau published a monograph dealing with the correlation between cancer and viruses; and N. Cajal and E.Nastac wrote the chapter on viruses and tumors in a treatise on oncology published by the Editura Medicală.

Apart from these important studies, the inframicrobiologists of the Institute have also carried out numerous investigations in other problems, such as : infantile sueta miliaris (St.Nicolau et al.), hydropigenous neuroviroses of fish (St.Nicolau et al.), jaundice of silkworms (A.Derevici), infectious anemia of horses (C.Surdan et al.), distemper (St.Nicolau and C.Surdan), unapparent viral diseases, spontaneous inclusions (St.Nicolau, R.Portocală, N. Cajal), in infectious mononucleosis (D.Sărățeanu, G.Marinescu), infectious lymphocytosis (N.Cajal et al., G.Marinescu), Kurloff's bodies (St.Nicolau et al.), cytomegalic disease (R.Portocală et al.), certain eruptive viral diseases (O.Mitroiu et al.) and foot

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and mouth disease, for which an efficient vaccine was prepared (V. Tomescu et al.), many interesting investigations were carried out. Most of the Rumanian investigations in the latter disease were summed up by V. Tomescu and collaborators in his monograph Febra aftoasă (Foot and mouth disease), and the works concerning mononucleosis and infectious lymphocytosis were likewise published by G. Marinescu.

Thus, 20 monographs have been written and published, or are in the press: 1) Soviet investigations in the field of influenza; 2) Soviet investigations in the field of encephalitides; 3) Lymphocytic meningitis; 4) Influenza; 5) Elements of general inframicrobiology; 6) Cancer and viruses; 7) Viral hepatitides; 8) Laboratory diagnoses of viral diseases; 9) Infectious lymphocytosis and mononucleosis; 10) Diseases transmissible to man from animals; 11) Poliomyelitis; 12) Viral infectious hepatitis; 13) Rabies; 14) Foot and mouth disease; 15) Swine plague; 16) The jaundice of silk worms; 17) Influenza, data on the 1959 epidemic; 18) Problems of inframicrobiology (in Chinese); 19) Lectures on inframicrobiology; 20) Elements of general inframicrobiology; 21) Elements of special inframicrobiology; 22) Ornithosis (in the press); 23) Cell cultures in inframicrobiology (in the press); 24) Adenoviral diseases (in the press); 25) Electron microscope techniques (in the press); 26) Rickettsial diseases (in the press); 27) Mumps, etc.

The Institute has published 42 numbers of the review "Studii și cercetări de inframicrobiologie" (Studies and investigations in inframicrobiology) (5895 pages).

Two booklets for the popularization of science have also been published: 1) Microbes and viruses, 2) V. Babeș, by St. Nicolau and 3) The world of viruses, by N. Cajal and R. Iftimovici. More than 200 lectures on viruses have been held at the broadcasting station, television station, public lecture halls in Bucharest and the provinces. Similarly, hundreds of scientific articles, declarations etc. have been published in newspapers and reviews for the popularization of science.

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A number of the works of the Institute have appeared in foreign reviews : Soviet, Hungarian, Czechoslovakian, French, German, Italian, Chinese, Indian etc.

Doubtlessly, that in this brief survey I have omitted some of the works done in the Institute.

We should like to emphasize the just orientation of the investigators of the Institute according to the materialist-dialectic conception, Pavlovist nervism and Miciurinism standing at the basis of many of the works cited, a fact fully recognised by our governing bodies.

It may be stated that the close collaboration of the management of the Institute and of many investigators with Soviet investigators, as well the ample Soviet specialty literature, permanently used in the Institute, have greatly contributed to the just orientation of the investigations carried out.

Of permanent aid for the documentation of the research workers were the specialty publications put at our disposal by the Rumanian-Soviet Institute.

The increasingly higher ideologic level of our investigators who attended marxist philosophy lectures at the university, special and Party courses, as well those organised in the Institute, visibly helped the work of our young and older investigators.

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The foregoing scientific works represent only a part of the scientific activity of the Institute of Inframicrobiology, of the effort made by the staff of the Institute in their research work.

Many of these works have a general theoretical importance, others have given a solution to practical matters, concerning our own country in the first place.

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But this question of practical applications is worth further mention.

Our Institute, permanently guided by the directives of the State and Party, has approached and solved not only some fundamental problems, but also many practical aspects of these problems, preparing operative vaccines, antigens, and sera, substances that are difficult to obtain from abroad, the prototype of some apparatus, etc.

Regional and interregional conferences and sessions were organized, instruction courses, epidemiologic surveys, etc.

In the specific prophylaxis of viral diseases, in 1946-1947 before the Institute had begun its activity, I prepared together with some of my pupils, in the Institute of Hygiene, at a very low cost, several million doses of anti small pox vaccine for the Ministry of Health.

Similarly, our Institute, together with the Section of animal viral diseases from the Institut Pasteur, prepared an anti-influenza vaccine realized by A.Derevici and co-workers, a vaccine that proved its efficacy during the 1959 February-March epidemic.

Y.Copelovici and M.Gruia prepared an anti mumps vaccine, which today applied in the field, and the detailed investigations carried out by the Institute have changed the anti-rabies vaccine applied in the country before 1950.

For the specific prophylaxis of animal viral diseases, the following vaccines were prepared : against swine plague, avian pest, distemper, fox encephalitis (which was exceptionally efficient when applied in the State silver fox breeding farms) and another original vaccine against fish hydropigenous neurovirosis. A serum was also prepared against Aujeszky's disease.

Stress should likewise be laid on last years foot and mouth disease epizootic which ^{lead} to the preparation of a vaccine with strains isolated in the field. Satisfactory results were obtained and the vaccine was widely applied.

D.Sărățeanu and co workers were able to prepare

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a vaccine against ewe abortion which proved extremely useful in the control of this affection that was causing severe losses, and at present he is preparing an anti ornithosis vaccine, attenuated with silver nitrate. Another metallized vaccine has been prepared against tick-borne encephalitis. These will soon be applied, we hope.

At the same time, antigens are being prepared for hemagglutination-inhibition of all the influenza types isolated in the country, as well antigens for intradermoreaction with the mumps virus and complement fixation with the psittacosis, ornithosis and mumps viruses.

1-6 fructose di-phosphate, necessary for serum aldolase tests has been prepared according to a special technique developed by the Institute.

It should be mentioned that the antigens and the diagnostic sera prepared as well the material for serum aldolase tests has been offered free of cost by our Institute to numerous sanitary units.

Our investigators have wholeheartedly joined in the epidemiologic surveys demanded by the Ministry of Health. These surveys in the problems of epidemic hepatitis, influenza, poliomyelitis, ornithosis, adenoviral diseases represent an activity of more than 2000 days work.

In the Institute, and especially at the two units within the "Colentina" and "Mihai Bravu" Hospitals of contagious diseases, the investigators not only carry out their research work but have also performed more than 2000 tests for virologic diagnoses for the patients of these and other hospitals.

It is also in view of helping the health speciality network, that numerous training courses and lectures have been organised by the Institute throughout the country. Aid has likewise been given to the specialty or related manifestations of the R.P.R. Academy and the Union of the Societies of Medical Sciences.

Some of the members of the Institute are on the teaching staff of the University, at the Chair of Virology, and

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hundreds of students have been initiated and guided in their first steps in virology, in a closer knowledge of the causal agents which produce about 80% of the infectious diseases of mankind. Many doctors have been trained in our specialty at the courses for the perfectioning and specialization of post graduates.

The Institute keeps in permanent contact, both as regards information and collaboration, with other institutes, clinics, research units, high schools and medical assistance in Bucharest and the rest of the country, and with the scientific institutes in the socialist countries. Visits abroad for an exchange of experience, at congresses or other international manifestations draw still closer the ties that link our institute to the institutes of other countries, an obligate condition for the progress of our research work.

During the last years, more than 20 countries have been visited by our investigators, who not only took an active part in the proceedings and various symposia, congresses, conferences, both scientific and political, but also made known in these countries the achievements of Rumanian inframicrobiology and our contribution in the theoretical and practical spheres of virology.

We cannot end the list without mentioning some of the inventions of our investigators, which have aided and perfected the work of specialists.

Thus, A.Derevici and co-workers have devised a portable apparatus of the Ivanov Smolenski type, for the study of higher nervous activity in man, as well as a closed circuit device for the preparation of an anti-influenza ovovaccine; S.Mateescu built two lyophilization apparatus, one of which is extremely simple, easy to sterilize and has been appreciated by many investigators abroad; he also devised a simple device for making carbonic ice, together with N.Cajal a model for sterilizing the lyophilization apparatus, and together with R.Portocală a shadowing device for electron microscopy. R.Portocală and St.Dumitrescu made a microtome for the electron microscope; S.Mateescu, M.Ianconescu and

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I.Suhaci devised simple models for automatic syringes; I. Aderca and M.Ianconescu a trypsinization apparatus; M.Ianconescu a perfusion chamber for microphotography.

We should likewise wish to point out, that most our investigators have also contributed to the popularization of science and culture by lectures, articles written in newspapers and reviews, booklets, lectures held at the radio, television, etc.

The data presented reflect in a great measure the scientific and practical activity, the efforts made in our speciality for the popularization and spread of science and culture by the investigators of the Institute, whose constant aim was to enrich the science of our country with new discoveries dedicated to public health, to raising the cultural standard of the masses and to the building up of socialism.

None of these achievements would have been possible without the continuous aid given by the E.P.R.Academy and the Ministry of Health and Public Welfare under the guidance of the Party and State.

Moreover, if we briefly look over the fundamental increase in books, periodicals, chemicals, instruments and equipment, etc. we shall observe the precious aid so constantly awarded to the Institute.

It is by these 13 years sustained activity that the investigators of the Institute have tried to do their duty and to prove their indebtedness to the people's democratic regime, to the Party and the Government.

How will they answer in the future to the trust put in them and the aid given to them by the Party ?

By continuing to teach new staffs, to acquaint them in as far as possible with the vast ideas of our speciality and the new techniques; by paying increased attention to the lessons given, by making new discoveries and applying in practice the theoretical notions obtained from our own works and those published abroad; to follow the orientation given by Soviet science, adopting the working methods and ideals of the Soviet scientists, striving to achieve realizations

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of the best quality, ideologically pure in ideas; keeping to plan and observing the rules of discipline in our work; lending our support to the important State problems; fulfilling our own problems in collaboration with other scientific units in the country and other friendly countries.

But this new stage that is opening in front our Institute implies also other tasks deriving from the conventions which will be signed by the R.P.R. Academy and the Ministry of Health and Public Welfare. New tasks will be given us, that of teaching and controlling from the scientific viewpoint the other specialty units in the country; coordinating specialty tuition in the 5 University centers; coordinating and directing virologic research in the field, in research and medical units; guiding the units for virologic diagnosis in hospitals and clinics, etc.

Methodologic authority, scientific research and instruction center, new tasks devolve upon our Institute, the fulfillment of which will promote our specialty to the fore among medical disciplines.

Fulfilling with enthusiasm and fully consciously the role which the present stage of medical science has attributed to our Institute, we shall be able to respond to the trust put in us by the Party and Government, and will have the satisfaction, in the new Institute, to be opened this year, to be useful to science, to our country and our people.

I

GENERAL INFRAMICROBIOLOGY

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1. ACAD.ST.S.NICOLAU, A.DEREVICI, N.CAJAL. Histopathologic and experimental investigations on the Gasser ganglion. Bul.Stiint.Acad.R.P.R., Sect.St.Med. 1949, 1, 2, 133. (5 figs.)

Histopathologic study of the Gasser ganglia from persons who died of various accidents or affections, showed the existence of pericapsular proliferative processes in 7 cases, neuronophagia in 2 cases, atreptic neurons in 6 cases, the presence of plasmatic cells in 7 cases, pigment-filled neurons in 3 cases.

In 16 cases, intranuclear inclusions were found, measuring 1-2 μ ; these inclusions are round, surrounded by a characteristic halo, and may be found in the nucleus, 1-2-5 at a time. They stain red by the Mann method and the cell in which they are contained maintains its morphologic and tinctorial integrity perfectly. Such inclusions have been constantly found, particularly in the ganglia from cases of dementia praecox.

Inoculation by various routes to rabbits, guinea pigs, rats and mice of Gasser ganglion emulsions from histologically examined cases, did not determine any pathologic manifestation.

2. ACAD.S.NICOLAU, N.CAJAL. The presence of cytoplasmic and nuclear inclusions in the cells of the human parotid gland. Bul.Stiint.Acad.R.P.R., Sect.St. Med. 1949, 1, 3, 307.

The histopathologic study of parotid gland sections from persons of various ages, who had died in accidents, revealed characteristic cytoplasmic inclusions in the parotid cells, besides the nuclear inclusions described

by various authors. These cytoplasmic inclusions are surrounded by a halo and are to be found in groups of 1-2-3 in a cell; they vary in size from the limit of visibility up to 3 μ .

At the microscopic examination, these formations have a homogenous internal structure in the form of hyalin masses.

Both the nuclear and cytoplasmic inclusions in the parotid cells are of inframicrobial origin.

3. R.PORTOCALA, A.DEREVICI, P.VASILESCU. Comparative study of the action of certain enzymes on the polyhedral inclusions of silkworms and crystalloid inclusions in the liver of dogs. Bul.Stiint.Acad.R.P.R., Sect.St.Med., 1949, 1, 4, 365.

The results reported show that the polyhedral crystals of silkworm polyhedrosis resist in the experimental conditions described to the digestive action of papaiotin, pancreatin, trypsin and pepsin; in the same conditions, the crystalloid inclusions in the liver of dogs are partially digested by papaiotin and totally destroyed by pepsin.

This fact pleads in favour of a different chemical structure of the polyhedral crystals in the silkworm and hepatic inclusions in dogs.

4. R.PORTOCALA, P.VASILESCU. Study on the nature of intranuclear crystalloid formations in the liver of dogs. Bul.Stiint.Acad.R.P.R. Sect.St.Med., 1949, 1, 5, 423.

Investigations of a physical order and cyto-chemical reactions were carried out with a view to determining the intimate nature of intrahepatic crystalloid formations.

The crystals are not soluble in distilled water, chlorhydric, acetic and nitrogen acids. The crystals are likewise not soluble in concentrated alkaline solutions. Alcohol and xylol leave them intact.

Cadaveric autolysis has no influence upon them.

The hepatic crystals do not present at the micro-spectroscope any band of adsorption in white light.

Polarized light is not influenced by these crystals.

Following cyto-chemical reaction, the absence of Fe, Cu, Zn, Pb and P or Ca salts is observed; K is revealed.

Neither of the nucleic acids could be found.

Negative results were obtained for the presence of SH- radical and reduced glutathione.

Positive results were always obtained in the cyto-chemical reactions revealing the presence of proteins. These results were confirmed by the use of proteolytic enzymes.

It results therefore that intrahepatic crystalloid formations are made of protein substances, crystallized in cubes.

5. R.PORTOCALA, A.DEREVICI, P.VASILESCU. Flow birefringence applied to the study of silkworm polyhedrosis.
Bul.Stiint.Acad.R.P.R. Sect.Sc. Med. 1949, 1, 5, 423.

Experiments aiming at elucidating the morphology of the elementary bodies of silkworm polyhedrosis and based on the use of the phenomenon of flow birefringence, showed that these bodies have a spherical form or at any rate the form of a coccobacillus, since concentrated suspensions of these germs do not present the phenomenon of flow birefringence.

6. N.CAJAL. "Spontaneous" inclusions in tonsil cells.
 Bul.Stiint.Acad.R.P.R., Sect.St.Med.1950, 2,
 10, 1399.

The microscopic study of tonsil sections from 49 subjects of various ages showed the presence of cellular inclusions (nuclear or cytoplasmic) in 33 cases (67.34%). The single or multiple inclusions, whose size ranges from the limit of visibility to 2 microns stained by the Mann method bright red, were encountered both in the follicular and epithelial cells, in the areas more frequently situated in the vicinity of the tonsil crypts.

7. G.BALMUS, N.CAJAL. Research on the evolution of certain viral diseases in rabbits with experimental diabetes.
 Comunicările Acad.R.P.R. 1951, 1, 7, 669.

Study of the evolution of certain viral diseases (vaccinia, herpes, Aujeszky, rabies) in rabbits with experimental diabetes induced by alloxane and study of the low reactivity of the organism in this disease, showed that the vaccinia virus produced cutaneous lesions in twofold dilutions as compared to those employed in the control animals; the pustules developed were large and numerous and cicatrization delayed.

The herpes virus and the Aujeszky virus developed identically in both groups of animals.

A shorter period of incubation was observed in the diabetic animals with the fixed rabies virus and particularly with the street rabies virus; the animals died at the utmost in 21 days whereas the controls only 50 days after the intramuscular infection with the street virus.

8. A.DEREVICI. The action of certain metals on hemagglutination. Comunicările Acad.R.P.R.1952, 2, 5-6, 375.

In 1927 the author had already observed the "positive" action of sera in the complement deviation test due to the formation of certain metal-protein complexes in the sera in which metallic nickel was slowly ionized. Using the same technique for the preparation of metal-protein complexes with the aid of metallic nickel in the allantoic fluid of eggs inoculated with the avian pest virus, the formation of a conglomerate rich in viruses was observed; this sedimented rapidly leaving a supernatant almost completely devoid of fluid proteins and with few elementary bodies. This supernatant in contact with hen red blood cells yielded positive hemagglutination, a fact which demonstrates the role of the ions in this reaction. On the Giemsa stained red blood cells, intensely violet dyed particles may be observed disseminated like a fine powder - the nickel ions.

9. A.DEREVICI, D.SARATEANU, C.ALBU, C.HONDOR, P.DUCA.
Research on metal-protein complexes in some biologic products. St.cerc.inframicrobiol., microbiol., parazitol., 1952, 3, 1-2, 212.

The property of certain metals to form, in contact with proteins, metal-protein complexes is used in order to obtain concentrated and purified viruses.

Fragments of metallic nickel and zinc were maintained in contact with a suspension of the pseudo-pest virus (Newcastle disease). The experiments developed under the conditions described by one of the authors in a previous work.

A precipitate was obtained containing a large amount of virus and in the almost limpid supernatant quasi-pure elementary bodies were to be found.

10. S.NICOLAU, A.DEREVIC T.MIRZA. Some results of the Pavlovist orientation in the investigations carried out by the Institute of Inframicrobiology. Report read at the scientific session of the Medico-Pharmaceutic Institute, December 3, 1954.

A description is given of the investigations carried out in the Institute of Inframicrobiology, in which the role of the cerebral cortex in inducing viral diseases was studied, as well as the evolution of these diseases and the immunity process. Research-work regarding the influence of the street rabies virus, influenza virus and antirabies vaccination on the higher nervous activity in animals, showed the appearance of a state of supraliminary inhibition, which is more accentuated in the case of inoculation. Investigations on the influence of sleep in rabies demonstrated a prolongation of the period of incubation, and in certain cases, survival of the animal. Summation of two stimulants (milk injection and heat stimulation) significantly prolongs the period of incubation. The role of psychic traumas in inducing certain diseases (pelagra) is likewise demonstrated.

11. I.MIRZA-EMINET. Experimental observations on modification of the higher nervous activity in certain viral diseases. Report red at the scientific session of the Institute for the Perfectioning and Specialization of Doctors and Pharmacists, February 17-19, 1955.

The author describes the results obtained in the detection of modifications of the higher nervous activity that take place during immunization, or in the course of the onset of viral diseases, such as rabies and influenza. Experiments were carried out on various animals (mice, rats and dogs,) applying various methods for the elaboration of

conditioned reflexes. The animals were subsequently vaccinated or inoculated with the respective virus. In most cases, after vaccination or inoculation, early modification of the conditioned reflex activity appeared, manifested by a process of supraliminary inhibition in cortical activity, sometimes accompanied by de-inhibition of subcortical activity. The state of inhibition may be preceded, in certain cases, by a short phase of increased excitability. The results tally, although the experiments were carried out on various animals, inoculated with various viruses or vaccines.

12. I .S.MATEESCU, .N.CAJAL. A simple method for sterilizing the lyophilization apparatus. Microbiol., parazitol, epidemiol., 1956, 4, 87.

The authors developed a method for sterilizing the lyophilization apparatus, by passing through it a flow of steam, heated to 130°C in an autoclave, from which the air is eliminated and the pressure raised to 2 atm.

The heated steam penetrates through a thick rubber tube into the apparatus and comes out through the lateral rubber tube, to which the vials, in which products are lyophilized, are adapted. In this way, the entire apparatus is sterilized. In order to avoid too much steam in the laboratory, rubber tubes are fixed to these lateral tubes by a metallic cuff and these, in turn, are connected to a metallic collector tube through which the steam is eliminated without. After sterilization, the apparatus is dried by a current of dry compressed air.

Sterilization was checked by means of microbial and inframicrobial suspensions, whose viability (pathogenicity or cultivability) completely disappeared after sterilization.

13. S.MATEESCU. Virus storage methods. Probleme de Inframicrobiologie, Edit.Med.,1956, 67.

Numerous methods are described for the maintenance of viruses by serial passages on sensitive animals; the maintenance of viruses in reservoir animals; the preservation of viruses in glycerin; the preservation by freezing; and storage by desiccation in complete vacuum, or lyofilization, which is considered the best known method until the present.

The author brings his personal contribution to this chapter of investigation with the lyophilization apparatus, conceived and made by him, and the sterilization of the apparatus, a method developed together with Dr.N.Cajal. The foregoing data show that preservation of tissue fragments in buffered glycerin is one of the most effective and readily applied methods, but that in case a lyofilization apparatus exists, this should be considered the best method for the prolonged and easy storage of viruses.

14. I.MIRZA-EMINET. Results obtained in inframicrobiologic investigations by means of the Pavlov methods. Report read at the Festive Session of the R.S.P.R. Academy on the 20th anniversary of the death of I.P.Pavlov. February 22, 1956.

The author gives a brief history of the works carried out in the field of immunology by various Soviet and Western investigators. A synthesis of the investigations carried out in the Institute of Inframicrobiology is presented, investigations in which the role of the cerebral cortex in the onset of viral diseases or in the elaboration of antiviral immunity was studied. To this end, research-work was carried out on : the role of

drug-induced or conditioned sleep in the evolution of rabies, the role of psychic traumas as adjuvant factors in the appearance of pelagra, the influence of neurotic states on the evolution of rabies, the evolution of rabies in rabbits submitted to the action of certain stimulants (heat and milk injections), the mode of reactivity of the cerebral cortex in cortical immunization processes in rabbits whose nervous reactivity was modified by drugs (benzedrine, luminal), reactivity of the cerebral cortex in various virus diseases, such as influenza, rabies, encephalo-myocarditis MM or in the course of anti-influenza and anti-rabies vaccination. The results obtained are analyzed in the light of I.P.Pavlov's teachings.

15. ACAD. St.S.NICOLAU. The phenomenon of "interference" in the field of viruses. "Problème de Infra-microbiologie", Edit.Med. 1956, 1,85.

The antagonistic effect that takes place when a sensitive cell is attacked successively or at the same time by two strains of the same virus or by two different viruses, named "interference", is discussed.

Interference, a non-specific phenomenon that may be obtained only with certain viruses, can take place in the animal organism, the embryonated egg or in tissue cultures in vitro:

- a) between 2 strains of the same virus with unequal virulence or with a different tropism;
- b) between related or unrelated viruses;
- c) between a partially inactivated virus and an active virus, resulting from multiplication, following 2 separate inoculations or a single inoculation - auto-interference.

Double or even multiple infections may occur in

the organism in the absence of the phenomenon of interference.

The phenomenon of interference is explained by blocking of the cellular enzymatic system by the virus that comes first (the interfering agent), the cellular metabolism thus blocked not being able any longer to offer to the second virus (the excluded agent) the metabolic chains which it lacks. This mechanism is regulated by the higher nervous centers.

16. ACAD.St.S.NICOLAU. Considerations on the mechanism of antiviral immunity and extinction of this immunity. St.cerc.inframicrobiol.,microbiol., parazitol., 1956, 7, 253.

The phenomenon of antiviral immunisation is analyzed in the light of Pavlov's nervist conception. Mention is made of Levaditi and Nicolau's hypothesis on tissular immunity in viral diseases and interpretations are given on the role of the central nervous system in the mechanism of resistance. Likewise, in contrast to antibacterial immunity, the three main mechanisms of reaction to the medium in the course of the adaptation phenomenon are discussed : the cellular, humoral and nervous mechanisms.

In the second part the mechanism of extinction of immunity in viral diseases is studied. It is known, from the investigations of Levaditi and Nicolau, that disappearance of the immunity of a tissular system is conditioned by the swiftness with which the cells of this tissue are renewed. In this way, memory of the first contact with the germs becomes extinct the sooner, the greater is the multiplication activity of the cells. Thus for instance, it was showed that neoplastic cells cannot become solidly and lastingly immune to any virus, because of their intense rate of multiplication, characteristic of this tissular system.

17. ACAD.S.NICOLAU, N.CAJAL. Natural and directed variability of inframicrobes. Probleme de Inframicrobiol. vol.1, Edit.Med.Bucharest, 1958, 1, 5.

The data in literature regarding natural and directed variability of inframicrobes are reviewed and the problem is discussed in comparison with the process of microbial variability.

Special emphasis is laid on the phenomenon of directed variability of inframicrobes. This method is considered the most effective and as having the most interesting prospects for obtaining avirulent, but immunizing virus variants, applicable as live modified vaccines with optimal results in the specific prophylaxis of certain human and animal viral diseases.

The last paragraphs deal with interpretation of the plurality of inframicrobial epidemic hepatitides, as a result of a process of spontaneous variability in natural conditions of the specific etiologic agent.

18. CLAUDE NICOLAU, N.DRAGANESCU. Behaviour of certain colloid systems during electrodialysis.
 1. The action of some heavy metals on viruses.
 St.Gerc.inframicrobiol.,microbiol.,parazitol., 1956, 7, 3-4, 413.

Electrodialysis with Cu, Pt and Au anode produces inactivation of the influenza, Aujeszky disease and poliomyelitis Lansing type viruses. Electrodialysis transforms the influenza virus into an effective vaccine for mice.

By means of several physical methods, the concentration of adsorbed ions was determined and the curves of the variation of extinction were plotted in terms of concentrations.

It was demonstrated that the phenomenon of inactivation which appeared was due to the blocking of the negative groups by heavy metal ions and of the positive groups by a combination of type CS₂ (CCl₄).

19. R.PORTOCALA. Electron microscopy applied to the study of inframicrobes. Probleme de Inframicrobiologie, Ed.Med. 1956, 1, 38.

A brief survey of the elementary notions of electron microscopy and the results obtained in the field of inframicrobiology.

20. R.PORTOCALA, S.DUMITRESCU, R.VOICULESCU, R.DAVIDESCU, AL.PETROVICI. Technique for obtaining thin sections for electron microscopy. Comunicările Acad.R.P.R., 1956, 6, 6, 845.

After numerous attempts with current material, a mixture of paraffin, bees wax and Carnauba wax in certain proportions was made for including the products to be sectioned in view of examination in the electron microscope.

The fragments of organs (nervous system) were fixed with OsO_4 , according to the Palade method. Sections of 0.05μ were obtained with the aid of the Danon type microtome.

21. P.ATHANASIU-STROESCU, AL.PETRESCU, N.DRAGANESCU.
Participation of the vegetative nervous system in certain viral diseases National Congress of Medicine, Bucharest, May 1957: Comun.Sect.neurol. endocrinol., 24.

On the basis of experimental investigation carried out with the street and fixed rabies virus, the herpes virus, the Lansing strain poliomyelitis virus and the avian pest virus (strain adapted by cerebral route to mice), the authors concluded on the predilection of these viruses for the vegetative, peripheral and central nervous system. Besides the brain the peripheral vegetative nervous system was constantly virulent in all these affections. Infection and death of the

animals inoculated by cerebral or peripheral route, can be brought about either by a suspension of the superior cervical ganglion, stellate ganglion, solar or nodous ganglion of the pneumogastric or with parotid gland suspension. Following these experiments, 3 routes of propagation of the virus towards the ~~neuraxia~~ are postulated, i.e.: the chain of the paravertebral sympathetic ganglia and parasympathetic cells, the spinal ganglia formations and the region of the neuraxial vegetative centers.

These formations, with the physiological role of a barrier, are the regions in which virulence is exacerbated or attenuated.

Invasion of these viruses from the vegetative nervous system determines an acute decrease of the resistance of the neuraxon and thus abets propagation of the infection to the other layers of the nervous system.

Knowing the important role played by the central and peripheral vegetative nervous system in the processes of defence and resistance to infection, its involvement in the viral diseases studied accounts for the severity of these infections and the difficulty of obtaining immunization, which is not possible without the anatomic and functional integrity of the vegetative nervous system .

22. I.MIRZA. Cortical reactivity in anti-viral vaccination, studied by means of Pavlov methods. National . . .
-Congress of Medical Sciences, May 1957, Comm.Sect.
neurolog., endocrinol., 55.

Cortical reactivity was studied in the case of anti-influenza and anti-rabies vaccination, by means of the Pavlov technique.

In anti-influenza vaccination, investigations were carried out on mice and rats, with previously elaborated conditioned reflexes. Vaccination gives rise to modifications of the conditioned reflex activity, manifested in most

cases by establishment of a supraliminary inhibition process. Inhibition is sometimes preceded by a state of increased excitability (particularly in rats). In anti-rabies vaccination, investigations were likewise carried out on mice and rats, as well as on dogs. The same state of early or delayed, more superficial or deeper inhibition, appeared in these cases.

23. ACAD. ST.S.NICOLAU, R.PORTOCALA. Morphology in virologic investigations. - Ant. Acad. R.P.R., 1957, 67, 121.

A synthesis of the results obtained in morphopathologic investigations in the field of virology. The alterations caused by viruses in the tissues have been studied from the very beginnings of this discipline. Thus, the first viral inclusions were described already in 1841 - therefore more than 100 years ago - in the sections obtained from human *Moluscum contagiosum*. The investigations of Victor Babeş were always founded upon the morphologic examination of sections from experimentally or naturally infected animals. Owing to these methods Babeş was able to discover, for the first time, rabies inclusions and the rabies nodules that bear his name.

The investigations of the Institute of Inframicrobiology are to a great extent based upon histopathologic examinations. These have led to numerous discoveries, the most recent of which refer to the etiology of epidemic hepatitis.

The new techniques in the field of virology fully apply morphologic investigation of the interaction between virus and host cell. Thus, in tissue cultures, following growth of the virus, specific evolutive lesions are produced. Study in the microscope of these infected cultures yield valuable indications on the evolution of viruses in the course of their intracellular development. Recently, electron microscopy has become of particular importance in

virology. New techniques have made it possible to go into the minutest details regarding both the virus-infected cells and the sub-microscopic morphology of the viruses themselves. Ultra fine sections reveal to the virologist the evolution of viral multiplication and cell defence processes.

24. H. CAJAL, Y. COPELOVICI. Comparative investigations on the value of certain diluents used in experiments with viruses. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 9, 3, 335.

In order to establish the best diluent for experiments with viruses, a comparative study was carried out on the value of the isotonic 8.5 ‰ NaCl solution, distilled water, 2 % horse serum, 10 % human serum, simple broth and fowl embryo fluids. The experiments were done with the following viruses : the vaccinia, herpes, lymphocytic choriomeningitis and influenza viruses.

The studies carried out showed that for the vaccinia virus the best results are obtained with fowl allantoic fluid and 2 % horse serum, then with amniotic fluid and finally common broth.

For the herpes virus the best results were obtained with an isotonic 8.5 ‰ NaCl solution, fowl amniotic fluid and 2 % horse serum.

The best indicated diluents for the choriomeningitis virus are in the first place fowl embryo fluid and then isotonic 8.5 ‰ NaCl solution and 2 % horse serum. In the experiment with the influenza virus, the best results were obtained with fowl embryo fluid and 2 % horse serum, then with distilled water and broth.

In view of these results, the authors propose to substitute the isotonic 8.5 ‰ NaCl solution by other diluents which should be chosen in terms of the virus used.

25. N.CAJAL, N.DRAGANESCU, EL.LISSIEVICI-OPRESCU. The evolution of some experimental viral diseases under the action of 560 R.P.Chlorpromazine. Report read at the Symposium of Hypothermia and Neuroplegic drugs, Bucharest, May 25, 1958.

The studies carried out on the action of Largactyl in experimental influenza, poliomyelitis (Lansing), herpes and rabies in mice showed that administration of the drug by intramuscular or intravenous route to mice, inoculated by intranasal route with the influenza virus or by intracerebral route with the poliomyelitis (Lansing) or herpes viruses decrease in a very small degree the percentage of mortality and prolongs the period of incubation and the life of these animals.

Largactyl administered by intramuscular route to the white mouse infected with the street rabies virus does not influence the evolution of the disease, but seems to exercise an effect on experimental rabies of the golden hamster.

26. M.CEPLEANU, Y.COPELOVICI. Comparative study of the culture of some viruses on embryonated and deembryonated eggs. Report read at the Session of the Inst.of Inframicrobiology of the R.P.R. Academy, July 31, 1958.

The inoculation of some viruses on the deembryonated egg according to a modified technique, makes it possible to obtain good results with viruses that develop on the endoderm of the chorio-allantoic membrane (influenza virus, mumps virus, Newcastle disease virus).

This method can be used for electron morphologic studies, for investigations on the dynamics of virus multiplication, for the study of the effect of certain substances on virus multiplication, etc. Besides being economic, this method also has the advantage of removing the individual biologic factor of error.

27. G.DANIELESCU. Study of interference in the field of virology. St.cerc.inframicrobiol.,microbiol., parazitol., 1958, 9, 2, 223.

The author's report on her dissertation for the title of candidate in medical sciences. In the first chapter, many bibliographic data are given in connection with this phenomenon. In the original part of the work, the author describes the results obtained in the study of the phenomenon of interference in experimental infections caused by the herpes, influenza and street rabies viruses, using as interfering and excluded agent the same virus inoculated by two different routes at given intervals.

The data obtained led to the following conclusions :

A weak encephalytogenic strain of herpes virus, introduced by intravenous route to rabbits, can interfere with the same virus inoculated later into the brain. The phenomenon of interference is manifested by a prolongation of the incubation period by 4-5 days in the animals experimented upon as compared to controls.

Inoculation of the influenza PR₈ virus to mice by intraperitoneal and intranasal route brings about interference manifested by inhibition of virus multiplication, demonstrated by the hemagglutination reaction.

The fixed rabies virus, inoculated by intravenous route to rabbits confers a certain degree of resistance to the street rabies virus, inoculated into the sciatic nerve after 24 hours.

28. M.IANCONESCU, I.ADERCA. Technique of cultures on human amniotic cells. St.cerc.inframicrobiol, microbiol., parazitol., 1958, 9, 4, 429.

The economic advantages of cultures on human amniotic cells are shown as compared to monkey kidney cell cultures.

The cultures are obtained by trypsinization of the amniotic membrane, with an output of $9-11 \times 10^6$ cells per gramme of tissue. The best culture medium investigated was Hanks solution with 0.5% hydrolysate of 79% lactalbumin, 20% calf serum and 200 mM 1% glutamin.

29. ACAD.ST.S.NICOLAU, I.MIRZA. Viability of viruses in antiviral vaccines, studied by means of conditioned reflexes. Rév.Sc.Méd., 1958, 2, 167.

In an anti-viral vaccine, the chemically attenuated titer is of paramount importance. In the experiments mentioned, the fixed rabies virus inactivated by formol concentrations higher than 4 % becomes non-immunizing and also indifferent to pre-established conditioned reflexes in rats.

In concentrations lower than 4 %, formol respects the immunogenic property of the virus and upsets the previously established conditioned reflexes. Similar experiments carried out with the influenza virus yielded the same results.

It is reasonable to expect that up to 4%, formol maintains the virus alive, preserving its property of upsetting the pre-established conditioned reflexes and its immunologic potential. A formol concentration exceeding 4% causes death of the germ and ipso facto failure to react to conditioned reflexes and abolition of immunologic properties.

The sensitivity of the conditioned reflexes test for determining the viability of germs in an anti-viral vaccine prepared with attenuating chemicals is clearly revealed.

30. R.PORTOCALA, V.BOERU. Electrophoretic micromethod on agar gel. Biochimia Aplicatã, 1958, 5, 1, 16.
St.cerc.inframicrobiol, 1958, 2, 2, 167.

By applying a layer of buffered agar on a microscope slide, it is possible to obtain an electrophoretic micro-

method that yields a curve which can be superimposed on those obtained by the classical electrophoretic methods.

Accurate electrophoretic determination with minimum amounts of serum can be performed by means of this micromethod.

31. R.PORTOCALA. Electron microscopy in cyto-pathologic investigations on viral diseases. Microbiol., parazitol., epidemiol., 1958, 193.

A brief survey of the present-day data on the techniques employed to obtain thin sections for the electron microscope. The principal results obtained by these methods in the study of cellular lesions caused by inframicrobes are succinctly listed.

32. I.ADERCA, L.IANCONESCU, M.NACHTIGAL. How to obtain human embryo cultures by trypsinization. St.cerc.inframicrobiol., 1959, 10, 2, 187.

The authors describe in detail the technique employed for preparing human embryo cell cultures by trypsinization. One to three months total embryos were used. The output of trypsinization was 40×10^6 cells per gram of tissue. The following nutrient medium was employed : Hanks and Earle solution + calf serum + glutamine solution + lactalbumine hydrolysate. The cultures develop quickly forming a continuous layer of fibroblasts, which can be inoculated between the 4th and 6th day after seeding the cells.

33. I.ADERCA, L.IANCONESCU, M.NACHTIGAL. Study on in vitro cultivated human cells.

Methods and cytologic study.

Consfătuirea Interregională de morfologie,
Tg.Mureș, Jan.18-19, 1959.

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the respective viruses showed a more intense multiplication of the germs in the organism of the irradiated animals.

Under the action of beta and gamma radiations, some viruses, such as the poliomyelitis virus, type II (MEF₁), may induce experimental infection following inoculation by routes (peritoneal or subcutaneous) other than those usually employed. The Coxsackie virus (A₂), pathogenic only for the new-born mouse, determines in the adult animal under the action of P³² or I¹³¹ a lethal paralytic disease. Moreover, under the action of internal irradiation, the virus persists in various organs and tissues a longer period of time than in the control animals.

36. M. IANCONESCU, I. ADERCA. Susceptibility of human embryo cell cultures obtained by trypsinization, to infection with certain viruses. St.cerc.inframicrobiol., microbiol., parazitol., 1959, 10, 2, 193.

Human fibroblast cell cultures obtained by the trypsinization technique previously described by the authors, were inoculated with a great variety of viruses, in view of studying the cytopathogenic effect. The following viruses were tested: poliomyelitis type I, II and III, ECHO virus type 1-3, 5-9, 11-13 and 19, A.P.C. virus 1-4 and 6, herpes virus, influenza, epidemic mumps, rabies, swine pest viruses, obtaining a cytopathogenic effect with all the types of poliomyelitis, ECHO, A.P.C. and herpes viruses. The morphology of cellular degeneration is different and characteristic for each group of viruses.

No cytopathogenic effect is obtained with the rabies, influenza, mumps and swine-pest viruses.

37. M.IANCONESCU, I.ADERCA, N.CAJAL. Cytopathologic modifications produced by viruses in all cultures.
 Consfătuirea interregională de morfologie,
 Tg.Mureș, Jan.18-19, 1959.

The authors study the various cytopathologic aspects caused by the poliomyelitis, herpes, A.P.C. viruses, etc. in human embryo and amniotic cell cultures, obtained by tripsinization.

They discuss the specificity of the lesions produced by various viruses on "in vitro" cultivated cells and the possibility of identifying them with a view to making a diagnosis based on the cytopathogenic aspect.

The investigators likewise discuss the problem of the parallelism between in vivo and in vitro cellular lesions.

38. S.MATEESCU. A new type of sterilisable lyophilization apparatus, with a vacuum device. St.cerc. infra-microbiol., 1959, 10, 3, 357-360

A new type of lyophilization apparatus is described, sterilisable, economic, readily built in any laboratory and easily handled, with a vacuum device.

The apparatus comprises two parts : a double wall glass vessel to which the lyophilization vials are attached and an empty, 30 to 40 liters water-tight closed container. A vacuum rubber tube links the vessel and the container to a vacuum pump. The vacuum pump operates only 30 minutes at the beginning of the process of lyophilization.

Drying of the biopreparations lasts 30 minutes to 2 hours.

Experiments were carried out with this apparatus during 4 years. The lyophilized preparations obtained were excellent qualitatively and quantitatively.

39. R. PORTOCALA, S. DUMITRESCU, N. I. IONESCU. Simplified washing technique of the preparations for electron microscopy by dialysis. Comunicările Acad. R. P. R. Sect. St. Med., 1959, 9, 11, 1205.

The authors developed a washing technique of the preparations for electron microscopy by dialysis. The grids, covered by a formvar membrane, are put in a Petri dish, on moist filter paper. A drop of the suspension to be examined is put on this grid and washing is performed by dialysis against the distilled water soaking the filter paper.

The essential condition for good washing of the preparation is perfect adherence of the grid to the moist filter paper.

This technique has the advantage that it does not lower the virus content of the suspensions and achieves a correct washing of the preparations by the removal of electrolytes from the suspension to be examined.

40. R. PORTOCALA, N. I. IONESCU, M. ANDREESCU, S. DUMITRESCU. Use of sulphuretted platinum and palladium in the shading of preparations for the electron microscope. Comunicările Acad. R. P. R. Sect. St. Med., 1959, 9, 11, 1209.

A mixture of sulphuretted platinum and palladium (at a ratio of 3:1 for the respective methods), readily evaporates and can thus be used in the current technique of shadowing of the preparations for the electron microscope, obtaining a sufficient contrast even for a layer of 6 Å thickness.

The diffraction electron images showed that after electronic bombardment during 30 minutes at 80 KV, the layer deposited maintains its amorphous structure.

41. R.PORTOCALA, V.BOERU. Biochemical methods of investigation in electrophoresis micromethods on agar-agar gel. Voprâsi medîţinskoî himii, 1959, 5, 310.

Electrophoretic micromethod for determination of serum proteins in thin agar films on glass slides. The electrophoretic curves coincide with those obtained by the usual electrophoretic methods. It is possible to separate very small amounts of protein fractions from the serum in a short interval of time, and then to stain them with bromophenol blue.

Quantitative electrophoresis determination is obtained by means of an automatic densometric system.

42. N.CAJAL. Recent advances in virology. Microbiol., parazitol., epidemiol., 1959, 4, 293.

The latest advances in the field of virology are presented, particular attention being paid to morphology, biology, the methods for isolation of viruses in cell cultures, diagnosis and prophylaxis of the most important viral diseases.

The role of nucleic acids in the reproduction of viruses, controlled variability especially by recombination of ribonucleic acid and viral protein, host-cell virus relationship, radio-isotope labelling of viruses, the discovery of ECHO and A.P.C. viruses, the relations between viruses and tumors, the viral etiology of leukemia, the effect of ionizing radiations on viruses, new vaccines with live viruses, efficient in poliomyelitis, measles, etc., are viewed and analysed in the light of the latest investigations in our country and abroad.

With a view to recent advances in virology, the prospects of this specialty are discussed and the important place it must occupy in biology.

43. I.SAMUEL. The origin of viruses in the light of dialectic materialism. Stud.cerc.inframicrobiol.1960, 11, 2, 307.

Various theories on the origin of viruses are reviewed in the light of dialectic materialism and the idealist theories concerning this question are combated. To conclude, stress is laid on the discovery of the role of nucleic acids, which raises new aspects of the problem of the origin of viruses.

44. R.PORTOCALA. The relationship between the immunogenic activity of an antiviral vaccine and its infectivity. Stud.cerc.inframicrobiol.,1960,11,3, 365.

The role of ribonucleic acid in the viruses that constitute antiviral vaccines is discussed.

The conclusion is reached that active vaccination can be obtained only with a virus that has maintained to a great extent its infectivity through its RNA, capable of inducing the cell to synthesize the homologous virus. The viruses that have lost this capacity can no longer induce intracellular immunogenesis.

This implicitly points to the conclusion that the site of immunity in the sphere of viral infections is the cell, since only within an integral cell, can RNA exert its inducing action that leads in the last instance to the generation of virus, which becomes antigen through its protein.

45. R.PORTOCALA. New data and interpretations in the problem of viral multiplication. Stud.cerc.inframicrobiol. 1960, 11, 4, 597.

The work is divided into three parts: the first part is dedicated to our present knowledge on the role of nucleic acids and particularly of ribonucleic acid in the mechanism of multiplication of small viruses, with a simple chemical struc-

ture, true nucleoproteins. The second part sums up the research work of the author and his co-workers on the infectivity of RNA extracted from influenza and Newcastle viruses. The third part deals with the interpretation of certain notions of inframicrobiology, viewed in the light of the latest discoveries on the role of nucleic acids in viral particles.

46. N.CAJAL. Some considerations on the diagnosis of human inframicrobial diseases. Microbiol., Parazitol., epidemiol. 1960, 5, 385.

A description and analysis of the present diagnostic possibilities in human viral diseases. The authors show the use and classify the methods for the isolation of viruses in laboratory animals, embryonated eggs, cell cultures, describing the various serologic, histopathologic and allergic methods.

The authors point out the importance of a close collaboration between clinician, epidemiologist and virologist, as well as the necessity of organizing a great number of laboratories, endowed with the equipment and biologic products for viral diagnosis, and staffed with specialists.

The paper is illustrated by a number of synoptic tables giving indications for the diagnosis of the most important human inframicrobial diseases, according to the clinical phase.

47. G.DANIELESCU, V.BOERU, I.ADERCA, M.IANCONESCU. Glucid metabolic alterations in the chorio-allantoic membranes in vitro under the influence of interferon. Stud.cerc.inframicrobiol. 1961, 12, 1, 109.

Interferon modifies the cellular metabolism of the chorio-allantoic membrane, in the sense of an inhibition of glucose consumption from the medium. This modification be-

comes detectable after 7 hours and accentuated 24 hours after contact between the cell and the medium that contains interferon.

A lower glucose consumption has likewise been observed in the membranes treated with interferon as compared with the controls also and after adding the virus, after 24 and 48 hours.

It is discussed wheather the observed inhibition of glucid metabolism is not one of the causes of interference or of virus synthesis inhibition under the influence of interferon.

48.

M.BABES. 70 years since the discovery of the basis of serotherapy, (1889-1959). Stud.cerc.inframicrobiol.1961, 12, 1, 143.

It is emphasized that the first categorical statement on the law of passive immunity, that stands at the basis of serotherapy, was made by Victor Babes in 1889.

After showing in detail the stages of Victor Babes's laboratory experiments up to their final success and application of the results obtained to persons severely bitten by wolves, at the Victor Babes Institute in Bucharest - besides the Pasteur vaccination - the author states that the moment has come in which the priority of the discovery made by Victor Babes, that stands at the basis of serotherapy, should be recognised throughout the world, keeping account of the unquestionable historical facts recognized moreover by a number of scientists.

49.

A.DEREVICI. The incomplete virus. Stud.cerc.inframicrobiol. 1961. 12, 1, 151.

The techniques for obtaining incomplete virus are described and the theories concerning the mechanism of production of incomplete elementary bodies are discussed. Similarly,

morphologic studies linked to the presence of the incomplete virus are presented.

50. R.PORTOCALA, I.MARCULESCU, I.SAMUEL. On the materialist-dialectic interpretation in the problem of viral biosynthesis. Cerc.filozofice 1961, 8, 1, 81.

Starting from the experimental results obtained concerning the replication of some viruses by inoculation into the live cell of their isolated nucleic acids, the authors indicate the materialist-dialectic aspects that should be developed in order to understand the process of viral multiplication.

Different conceptions on the nature of viruses are critically analysed and the conclusion is reached that although the fact that viruses are not living matter has not yet been demonstrated, it may be admitted at least as a working hypothesis.

51. R.PORTOCALA, N.I.IONESCU. The morphology of nucleic acids. Stud.cerc.inframicrobiol. 1961, 12, 4, 557.

The results of morphologic investigations concerning nucleic acids extracted from tissues or microorganisms are reviewed. It is concluded that morphologic research work on nucleic acids is still in its initial stage.

52. ACAD. ST.S.NICOLAU. The achievements of the Institute of Inframicrobiology in its ten years of activity. Stud.cerc.inframicrobiol. 1961, 12,supl., 15.

The report briefly reviews the achievements of the Institute of Inframicrobiology in the last ten years : scientific works, didactic activity, activity linked to field necessities.

53. R.PORTOCALA. Investigations in the infectious role of viral nucleic acids. Stud.cerc.inframicrobiol.1961, 12, supl., 43.

This paper reviews the results obtained in investigations carried out on the infectivity of ribonucleic acids extracted from the influenza and Newcastle viruses, and deoxyribonucleic acid extracted from adenovirus. The assumption is made of the biosynthesis of viruses under the influence of nucleic acids and the role of the latter in the mechanism of immunization.

54. L.MIRZA. The results of the investigations of the Institute of Inframicrobiology concerning the role of the central nervous system in viral diseases and viral immunity. Stud.cerc.inframicrobiol.1961, 12, supl., 119.

The author reviews the experiments carried out by the Institute of Inframicrobiology of the R.P.R.Academy concerning various aspects of the reactivity of the organism in viral diseases, in terms of the state of cortical reactivity.

On the one hand, the reactivity of the organism, whose cortical activity has been previously modified by various procedures, following inoculation of various viruses, was investigated, and on the other, the disturbances in cortical activity that appear after inoculations without the intervention of an additional factor acting upon the central nervous system.

55. I.ADERCA, M.IANCONESCU. The value of human embryo cell cultures for the laboratories of inframicrobiology. Stud.cerc.inframicrobiol.1961, 12, supl., 127.

The investigations of the authors on cultures of human embryo cells obtained by trypsinization of the entire 1 to 3 months old human embryo, according to a technique

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devised by the authors, are viewed. These cultures are susceptible to the cultivation of 51 different virus strains, of which ECHO, polioviruses, etc. The authors also discuss works carried out in the Institute in which human embryo cell cultures were used, such as replication of adenovirus type 3, the preparation of interferon, isolation of hepatitis virus.

The theoretical premises that stand at the basis of the high biological value of this type of cell culture are discussed.

56. ACAD.ST.S.NICOLAU, L.MIRZA, I.SAMUEL, T.ENACHE. A study of the immunogenic potential of formolized rabies and influenza vaccines by means of the conditioned reflex method. Stud.cerc.inframicrobiol.1961, 12, supl., 175.

The conditioned reflex method was used as a test for the determination of the degree of viability of the viruses contained in a rabies and influenza vaccine attenuated by means of chemical agents. The investigations showed that addition of formol up to 4% in the case of the rabies virus and 1% in the case of the influenza virus respectively, does not impair their viability and maintains their immunogenic potential as well as their property of disturbing previously established conditioned reflexes. Addition of formol over 4% or 1% in the case of rabies and influenza viruses respectively, kills the germs and suppresses their immunogenic potential and their action on conditioned reflexes, which are not altered.

II

VIRUSES AND TUMORS

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57. ACAD.ST.S.NICOLAU. Cellular proliferations in the human and animal organism under the influence of certain inframicrobial germs. Some considerations on the viral hypothesis of cancer. Lectures. The Publishing House of the Chinese People's Republic Academy of Sciences, 1954-55, 79.

The author reviews the various proliferative cellular processes induced in the organism by the activity of inframicrobial germs, referring especially to a number of 17 viruses with the most varied affinities : neurotropic, epitheliotropic, mesodermotropic and pantropic. On the basis of more than 70 bibliographic indications, part of which from personal works, new data and concrete arguments are brought for the understanding of the mechanism of tumoral genesis under the influence of known inframicrobial factors. Interpretation based on numerous morphophysiological documents lends support to the conception of the viral etiology of tumors, a field of investigation in which Soviet science has carried out increasingly interesting research-works.

The problem of the inframicrobial etiology of cancer seems to near its final solution due to the remarkable and fruitful effort of the Soviet investigators.

Many figures (41 figures) illustrate the present paper.

58. N.CAJAL. Inframicrobial etiology of tumors in the light of the latest investigations. Probleme de Inframicrobiol. Edit.Med.,Bucuresti, 1956, 1, 99.

After describing the known data in literature on the viral etiology of certain benign human tumors, and benign and malignant tumors encountered in animals, new data are brought sustaining the hypothesis of the viral etiology of cancer in general.

These data show the intervention of a specific virus, which penetrates into the organism already during the first days of life (probably with the mother's milk), in the production of malignant tumors. This virus is maintained for a long time in a state of equilibrium in the organism in a biophyt state.

Following an upset of the equilibrium between the inframicro-organism and the macro-organism, a situation to which numerous factors can give rise but especially neuro-endocrine modifications, the virus regains its virulence, multiplies abundantly and enters into conflict with the organism. When the organism manages to overcome the germ by defense reactions, it becomes sterile as regards the virus; in the contrary case, the inframicrobe develops actively and furthers its oncogenic action which results in the appearance of cancer.

59. ACAD.ST.S.NICOLAU, N.CAJAL. Considerations on the viral etiology of cancer. St.cerc.inframicrobiol., microbiol., parazitol., 1957, 8, 4, 493.

After reviewing the last investigations regarding the viral origin of cancer, and describing their point of view, the authors uphold a personal theory on the mechanism of appearance of malignant tumors under the action of an inframicrobe. The hypothesis of a complex mechanism is emitted, according to which an important part in the appearance and evolution of cancer is played not only by the virus that penetrates at an early date into the organism and persists for a long time in a biophyt state, but also by the endocrine and nervous systems.

60. E.NASTAC. The action of some viruses on experimental tumors in mice and rats. St.cerc.inframicrobiol., microbiol.,parazitol., 1958, 9, 2, 213.

A study was carried out concerning the action of the fowl plague virus, strain 863, adapted to mice, on mouse spontaneous sarcoma 97. The virus does not modify the clinical evolution of the tumor. Inoculated to epithelioma M I bearing mice, the virus suppresses the grafting faculty of the tumor, which develops slower than the controls.

The same virus influences rat methyleholanthrene and spontaneous sarcoma, determining resorption or necrosis, with partial or total elimination of the tumoral tissue, suppression of the grafting faculty at the 3rd serial passage and prolongation of the incubation period of the tumor.

The virus isolated from the tumor or from the brain of the infected animal is much less virulent than the original strain.

Rat spontaneous sarcoma is likewise influenced in its evolution by the swine plague virus inoculated into the general circulation of the animal, but is not influenced by the parapoliomyelitis MM virus. Epidemic parotiditis virus, and to a lesser extent ectromelia virus, exercises an evident lytic action on this tumor.

61. E.NASTAC, D.SARATEANU. Study of the action of the mumps virus on Ehrlich ascitic carcinoma. St.cerc.inframicrobiol.,microbiol.,parazitol.,1958, 9, 4,421.

The mumps virus inoculated in situ exercises on the tumor a temporary destructive effect, manifested by the higher percentage of degenerative cells and by the lower number of cancerous cells per cubic mm. in the groups which received the inoculum simultaneously 48 and 72 hours after the graft.

The mumps virus does not influence the grafting faculty of the tumor until the third passage and does not cultivate in it.

62. E.NASTAC, B.FUHRER. Research-work regarding the action of certain viruses on Ehrlich ascitic carcinoma.
Action of the herpes virus and vaccinia virus.
Sesiunea Tineretului Acad.R.P.R., April 25, 1958.

The herpes virus inoculated in situ does not influence the transmissibility of ascitic carcinoma in mice, inoculated on the 4th day after the tumoral graft. It influences however the morphology of the tumoral cell, inhibiting the multiplication process at the first passage.

The vaccinia virus inoculated on the 4th and 6th day after the graft, prevents the development of the tumor at the first passage, a fact which is also confirmed by the morphologic aspect of the tumoral cell.

Neither the vaccinia virus nor the herpes virus can be recovered from the tumor.

63. E.NASTAC. Effect of the mumps virus on rat spontaneous sarcoma. Comunicările Acad.R.P.R., 1958, 8, 11, 1207. Rev.Sci.Med., 1959, 4, 69.

The mumps virus in allantoic fluid, taken from developing chick embryos infected with this virus, exercise a lytic action on the spontaneous sarcoma of the rat when it is inoculated intravenously to this animal.

The oncolytic action may be detected clinically and oncologically.

The virus does not influence however the grafting faculty at the first passage.

64. N.CAJAL, E.NASTAC. Study of the development of the Guerin T₈ epithelioma in rats previously infected with the vaccinia virus. St.cerc.inframicrobiol., 1959, 10, 4, 417. Rev.Sci.Med., 1959, 4, 15.

The evolution of the Guerin T₈ epithelioma grafted on previously immunized rats is studied.

The grafts made on animals immunized 20 and 40 days previously, give a higher rate of positive results, the tumors appearing sooner and their development being greater than in the control animals.

Sixty and especially eighty days after immunization, the tumor grafts gave a lower percentage of positive results, the tumors appeared later and they developed less than in the control animals.

The grafting faculty and the morphologic substrate are not influenced by the development of the Guerin T₈ epithelioma in rats previously immunized to the vaccinia virus.

65. O.COSTACHEL, E.NASTAC, B.ILIE. The influence of the vaccinia virus associated to narcosis on the evolution of Guerin T₈ epithelioma in rats. St.cerc.inframicrobiol., 1959, 10, 4, 425.

The vaccinia virus inoculated by intravenous or intraperitoneal route to rats with Guerin carcinoma inhibits tumoral growth at the beginning of its development.

Deep and prolonged narcosis during 45 hours, associated to the vaccinia virus, decreases the proportion of metastases and the mortality rate, as compared to the control group and to the group inoculated only with the vaccinia virus.

66. A.DEREVICI, AL.PETRESCU. The action of the hydrosoluble fraction of bee royal jelly on mouse Ehrlich ascitogenic tumor. C.R.des Séances de la Soc.Biol., 1959, 153, 2, 1720.

The hydrosoluble extract of royal jelly produced by *Apis mellifica* exercises an oncolytic effect on the Ehrlich ascitic tumor, inoculated to mice by intraperitoneal route.

This effect is proportional to the amount of the product used and to the interval of time after infection, maximum changes being observed on the 10th day after inoculation.

Oncolytic changes are to be found also in smears from the peritoneal fluid of the second passage, in which the above mentioned product was not used.

67. E.NASTAC, B.FUHRER. Research-work regarding the action of certain viruses on Ehrlich ascitic carcinoma. Action of the lymphocytic chorio-meningitis virus and the MM virus. Comunicările Acad.R.P.R., 1959, 2, 6, 645.

The MM virus destroys and prevents multiplication of the tumoral cells and suppresses the grafting faculty of the tumor when inoculated in situ 24 hours or 4 days after grafting. The chorio-meningitis virus does not influence transmissibility of the tumor.

The morphologic study of the tumoral cells shows the destructive action exercised by the MM virus and the absence of this action with the chorio-meningitis virus.

68. E.NASTAC, B.FUHRER, J.SAMUEL. Reproduction of the Ehrlich ascitic carcinoma by acellular filtrate. St.cerc.inframicrobiol.,microbiol.,parazitol., 1959, 10, 1, 89. - Rev.Sci.Med., 1959, 4, 73.

Inoculation by intraperitoneal route of an acellular filtrate of the Ehrlich tumor reproduces the tumor in a clinically inapparent form. The amount of ascitis produced is much smaller and the evolution of the tumor much slower than that of the control tumor obtained by inoculation of total ascitis by the same route. The tumor obtained by acellular filtrate can be serially passaged. The etiologic agent of the Ehrlich tumor seems to be a filtrable germ.

69. E.NASTAC, B.FUHRER. Action of the herpes virus on the Crocker sarcoma in mice. St.cerc.inframicrobiol., 1959, 10, 2, 173.

The herpes virus inoculated subcutaneously together with a tumoral suspension, stimulates the development of the tumor as compared to controls.

The herpes virus was not recoverable 2 weeks after grafting, neither from the tumor nor from the brain of the animals with infected tumors. It is possible however that it should exist in various tissues in a "masked" form.

70. E.NASTAC, B.FUHRER, D.SARATEANU. Research-work regarding the action of certain viruses on Ehrlich ascitic carcinoma in mice. Rév.Sci.Méd., 1959, 4, 77.

The viruses of epidemic mumps, parapoliomyelitis MM, vaccinia and herpes, inoculated by intraperitoneal route to mice with Ehrlich ascitic carcinoma exercise a partial or total destructive effect on the carcinomateous cells.

The lymphocytic chorio-meningitis virus inoculated

in the same conditions did not show the same properties.

71. O.COSTACHEL, E.NASTAC, B.ILIE. The action of ovovaccine associated to cytostatics on the evolution of Guérin tumor in rats. St.cerc.inframicrobiol., 1960, 11, 1, 31.

Potentiation of the action of certain cytostatics - (Degranol, Sarcolysin) on Guérin tumor with the aid of the vaccinia virus was attempted. The following results were obtained :

Ovovaccinia inoculated concomitantly to grafting of the tumor intensely stimulates successful grafting and growth of the grafts. This virus inoculated on the 3rd week after grafting inhibits the small tumors-and stimulate the growth of large tumors.

The interval between inoculation of the virus and of the cytostatics is determinant in the action of the ovovaccinia-Degranol association on Guérin tumor.

The action of association of virus and cytostatics on the tumor shows that the trophic modifications produced by the viral infection have a marked influence on the action of the cytostatics.

72. E.NASTAC, B.FUHRER. Investigations concerning the action of certain viruses on some experimental tumors. Stud.cerc.inframicrobiol., 1960, 11, 89 and Acta virol.Hung.1960, 7, 2, 181.

Using seven virus strains, the following results were obtained :

The avian pest virus, the neurotropic strain 836 adapted to mice, suppresses the grafting faculty of sarcoma 97 in mice and prolongs the life of the cancerous animals,

when inoculated in situ or in the general circulation. Similarly, it suppresses the grafting faculty and inhibits the development of mouse epithelioma MI. The same virus inhibits the development and partially suppresses the grafting faculty of rat methylcholanthren sarcoma. It induces partial or total oncolysis of spontaneous sarcoma, protracting the period of incubation and suppressing the grafting faculty at the 3rd serial passage. Inoculated into the organism of the cancerous animal, the avian pest virus loses its virulence to a certain extent.

The mumps virus exercises an oncolytic action on rat spontaneous sarcoma and a temporary destructive action on Ehrlich ascites carcinoma. Associated to the vaccinia virus it does not maintain its destructive effect on Ehrlich ascites carcinoma.

The encephalo-myocarditis MM virus does not influence the evolution of rat spontaneous sarcoma, but prevents the multiplication and destruction of carcinomatous cells in Ehrlich ascites in mice, suppressing the grafting faculty of this tumor.

The ectromelia virus determines intense necrosis and elimination of the cancerous tissue in spontaneous sarcoma bearing rats.

The herpes virus, inoculated in situ arrests the multiplication process of cancerous cells in mouse Ehrlich ascites carcinomatous tumor. In mouse Crocker tumor, stimulation of the development of the tumor is observed after inoculation of a mixture of tumoral and herpetic suspensions.

Influence of the vaccinia virus on Ehrlich ascites carcinoma is manifested by suppression of the grafting faculty and destruction of the tumoral cells when inoculated 4 to 6 days after grafting. Inoculated to epithelioma T₈ bearing rats it has an oncolytic action that is enhanced by deep narcosis of 4-5 hours and association of cytostatics (Degranol). Previous immunization of the rats against the vaccinia virus stimulates or inhibits the development of

Guérin T₈ epithelioma, according to the moment at which grafting is done.

The swine plague virus, inoculated in situ to methylcholanthrene sarcoma bearing rats and the chorio-meningitis virus inoculated to animals with Ehrlich ascites carcinoma does not influence the clinical evolution and morphologic aspect of the tumor.

73. E.NASTAG, I.SAMUEL, B.FUHRER. Cultivation of mouse Ehrlich ascites carcinoma in the embryonated egg. St.cerc. inframicrobiol., 1960, 11, 2, 257.

Mouse Ehrlich ascites carcinoma was cultivated in series in the chorio-allantoid membrane of 6-8 days old chick embryo. The tumor that developed on the chorio-allantoic membrane was identical both micro and macroscopically to solid mouse Ehrlich carcinoma. The tumor developping on the eggs was no longer pathogenous for the mouse.

74. ACAD.ST.S.NICOLAU. The oncolytic action of viruses. St.cerc. inframicrobiol., 1960, 11, 4, 529.

The author draws up a synthesis of all the works published on viral oncolysis since 1922 and until to-day. Apart from a description of the results obtained in experiments in vivo with more than 40 different viruses and those in vitro with 24 viruses, the various opinions concerning the oncolytic properties of viruses are critically discussed.

The most important idea emphasized in this paper is the oncolytic property of the virus adapted in view of tumoral distruction. The first, prospector, stage of research in which wild oncolytic viruses were investigated is of date, the other, more important stage of "modelling" of known viruses, in view of obtaining a useful variety for the distruction of cancer, is still open.

The experimental changes induced in Russian spring-summer, Far Eastern and West Nile encephalitis viruses, Newcastle virus, etc., which transformed "wild" viruses into oncolytic viruses, may be considered as a working theme. Moreover, it suggests, in viral therapy of tumors, the successive use of "modelled" viruses, judiciously chosen to this end.

The author does not agree with the interpretation of viral oncolysis as a phenomenon of interference, as suggested by the American School of Koprowski.

75. G.BALMUS, E.NASTAC. The action of a chelating product - disodium calcitetraacetate - on the evolution of Guérin T₈ carcinoma in the rat. St.cerc.infra-microbiol. 1961, 11, 4, 571.

The mechanism of chelating compounds in intoxications with heavy metals and other metabolic substances is discussed. Starting from the fact that these compounds may induce disturbances in enzymatic processes, the action of disodium calcitetraacetate on the evolution of rat Guérin T₈ carcinoma was investigated.

The animals treated concomittantly with inoculation of the graft, presented a delay in the appearance of the tumor and its evolution, in the second group, treated after the appearance of the tumor, its evolution is slow and the karyokinetic index very low in comparison with the control animals.

76. E.NASTAC, D.SARATEANU, B.FUHRER-ANAGNOSTE. The associated action of the vaccinia and mumps viruses on Ehrlich ascites carcinoma. Comun.Acad.R.P.R. 1960, 10, 5, 461.

Successive inoculation of mumps and vaccinia viruses in situ, to Ehrlich ascites carcinoma bearing mice, does not

influence the evolution of the tumor, although in previous experiments it was demonstrated that separate inoculation of the viruses influenced the tumor.

The vaccinia virus was recovered from the tumoral ascites, 10 to 15 days after grafting.

77. E.NASTAC. The oncolytic action of viruses. Microbiol., parazitol, epidemiol., 1960, 3, 193.

The paper is a review of the problem of virus induced oncolysis, initiated in 1921 by two Rumanian scientists, C.Levaditi and St.S.Nicolau.

After expounding the first investigations in this question, as well as other works that followed, certain results obtained by a team of researchers in the Institute of Inframicrobiology of the R.P.R. Academy are described.

The study of viral oncolysis has in view the biologic treatment of tumors by viruses, as a possibility foreseen by C.Levaditi and St.S.Nicolau. In contrast to other therapeutical methods (chemical, radiological), viral treatment of tumors does not affect other physiologic systems of defence of the organism (the reticulo-endothelial or hemato-poietic system), but requires their joint action.

Study of the oncolytic action of virus remains one of the chief aims of the Rumanian school of Inframicrobiology.

78. E.NASTAC, B.FUHRER. Investigations concerning the action of some viruses on Ehrlich's ascitic carcinoma.
I. The action of herpes and of vaccinia virus.
 St.cerc.inframicrobiol., 1961, 12, 2, 223.

The changes undergone by Ehrlich's ascitic carcinoma following the in situ inoculation of herpes or vaccinia virus show :

Herpes virus exerts no influence on the transmissibility of the tumor. When inoculated on the 4th day following grafting of the tumor, its influence on the morphology of the tumor cell is expressed by total inhibition of cell multiplication at the first passage.

Vaccinia virus, when inoculated on the 4th and 6th day following grafting, will prevent the development of the tumor at the first passage. This is confirmed by the morphological aspect of the tumor cells.

Neither herper, nor vaccinia virus can be recovered from the tumor.

79. E. NASTAC. New data on the etiopathogeny of human leukemias. St.cerc.inframicrobiol., 1961, 12, 2, 240.

The works from world medical literature, sustaining the viral etiology of human leukemias are reviewed, showing the conception of well known scientists on the viral etiology of the cancerous disease, a conception also supported by the Rumanian School of Inframicrobiology of Acad.St. S. Nicolau .

The author likewise reviews the works published in the last ten years, concerning the experimental study of human leukemias. The findings of the most various schools tend to lend support to the hypothesis according to which leukemias are caused by an agent with virus-like properties.

80. E. NASTAC, B. FUHRER-ANAGNOSTE, D. TARCHILA. Experimental investigations in human leukemia-Attempts at transmitting the disease to white hybrid mice. St.cerc.inframicrobiol., 1961, 12, 3, 359.

Inoculation by intravenous, intracerebral and intramedullar route to the white hybrid mouse of the blood and sternal marrow from 5 cases of human leukemia (chronic

lymphatic leukemia), determined an increase in the number of leukocytes with prevalent juvenile elements in 8 of the 22 animals that survived six months after the inoculation.

81. E. NASTAC, B. FUHRER-ANAGNOSTE, V. SUTEU. Experimental investigations in murine leukemia. I. Encephalopathy transmissible to the guinea-pig and rabbit by the inoculation of mouse AKm leukemic products. St. cerc. inframicrobiol., 1961, 12, 3, 363 and Rév. Sci. Méd. 1961, 3-4.

Mouse AKm leukemic products (total blood, the supernatant of tumoral suspensions and the filtrate of these suspensions), inoculated by intracerebral route, induced in the rabbit and guinea-pig a lethal, serially transmissible meningo-encephalitis.

The pathogenicity of the tumoral filtrate was higher than that of other material, particularly for the guinea-pig.

82. G. COSTACHEL, E. NASTAC, B. ILIE. The action of some viruses associated to cytostatics on the T₈ Guérin tumor. St. cerc. inframicrobiol., 1961, 12, 4, 437.

The APC virus type 6 and the swine pest virus inhibit the development of rat T₈ Guérin tumor, while the fowl pox virus does not influence the evolution of this tumor.

The inhibitory action is exerted only on small tumors (2 weeks after grafting).

The association of these viruses to cytostatics (sarcosyn, TEM, Tio-TEPA) does not potentiate their inhibitory action.

83. E.NASTAC, B.ANAGNOSTE, G.BALMUS. Experimental investigations in murine leukemia. II.-Pathogenicity for the white hybrid mouse of murine leukemic products from the AKm line. St.cerc.inframicrobiol. 1961, 12, 4, 513.

Murine leukemic products from the AKm line, inoculated by intracerebral route, are pathogenic for the white hybrid mouse, inducing a serially transmissible disease.

The tumoral suspension inoculated by intracerebral route transmits the disease up to the 6th passage.

The hematologic changes, obtained in 4 of 5 cases, do not appear sooner than 5 months after the virulent inoculation.

The same products also determine the appearance of the tumors mentioned.

The data obtained suggest the presence in the initial tumor of a filtrable pathogenic factor.

84. E.NASTAC, B.ANAGNOSTE. The results of the Institute of Inframicrobiology in the field of virus induced oncolysis. St.cerc.inframicrobiol., 1961, 12, supl., 107.

A synthesis of all the investigations carried out in the Institute of Inframicrobiology in the field of viral oncolysis, with a history of the problem, mentioning some original results obtained. Several general observations are made on virus-tumor relationships.

85. E.NASTAC, B.ANAGNOSTE, D.SARATEANU. Investigations concerning the action of certain viruses on Ehrlich's ascitic carcinoma in mice. III.- The action of swine plague, fowl pox and sheep pox viruses. St.cerc.inframicrobiol.1961, 12, supl., 275 and Rev.Sci.Méd.1961, 6, 1-2, 77.

Separate or associated inoculations of swine plague, fowl pox and sheep pox viruses at various intervals following the grafting of Ehrlich's ascitic carcinoma do not influence the clinical course and the morphology of the latter.

In the groups inoculated with the virus, the phenomenon of polymorphonuclear leucocyte incorporation in the cytoplasm of tumor cells was observed to occur.

86. M.CEPLEANU, N.CAJAL. Etiological investigations on human cutaneous reticulosarcoma. I.- Experiments in the chorio-allantoic of embryonated hen's eggs. St.cerc.inframicrobiol., 1961, 12, supl., 279 and Rev.Sci.Méd. 1961, 6, 1-2, 17.

Inoculation of the chorio-allantoic membrane of embryonated hen's eggs with a product collected from a case of human cutaneous reticulo-sarcoma resulted in the appearance of characteristic lesions displaying proliferative and infiltrative patterns, which could be reproduced in 19 successive passages. The cell-free filtrate induces the same changes as the centrifuged sediment. Heating of the filtrate for 20 min. at 100° C destroys its infectious activity. Neutralization tests were carried out by means of 2 human sera and of sera prepared in the laboratory in rats and guinea-pigs. The results of these tests were not conclusive and did not help in the identification of the agent isolated.

Since the germ could be maintained by serial passages in embryonated hen's eggs, the hypothesis of a viral etiology of human cutaneous reticulo-sarcoma is considered.

III

DERMATO - VIRAL DISEASES

87 - 94

87. ACAD. ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. Investigations on improvements in the harvesting of the vaccinia virus cultivated on the skin of calves. An.Acad.

R.P.R. Sect.St.Med., 1949, 1, Mem.15, 477.

Harvesting from calves, inoculated with the vaccinia virus, of small portions of the epithelium in the inoculated area, besides the pus which usually constitutes the vaccinia lymph, showed the presence of important amounts of vaccinia virus, that are not generally used in the preparation of the vaccine.

The pus obtained by superficial scraping of the inoculated skin has been designated as "pyo-vaccine", and the vaccinal product obtained by biopsy or deeper scraping of the skin "epithelio-vaccine"; the two combined constitute the "epithelio-pyo-vaccine".

Use of the "epithelio-pyo-vaccine" makes possible to obtain a virus with intact biologic properties and to use high dilutions, therefore a larger amount of vaccine supplied by the same animal.

By successive freezing and unfreezing of the vaccinal pulp collected from the calf, a double dilution of the virulent material was obtained, yielding the same results and, therefore, a double amount of vaccine.

The blood collected at the same time by deeper scraping and which contained virucide antibodies, did not modify the titer of the vaccine as compared to the pyo - vaccine, harvested without blood.

88. R.PORTOCALA, N.CAJAL. The action of serum immunoglobulins on the vaccinia virus. Bul.Acad.R.P.R., 1950, 2, 10, 1391.

A comparative study of the in vitro action of serum immunoglobulin fractions and of total immune serum

on the vaccinia virus showed the following : after a 3 hour contact at room temperature and then 24 hours in the ice-box, the mixture of immune serum and vaccinia virus dilutions, on the one hand, and the mixture of soluble globulins and vaccinia virus dilutions, as well as the mixture of insoluble globulins and the vaccinia virus dilutions, on the other hand, inoculated to rabbits on the depilated, shaved and scarified skin of the flanks gave the following results : 1. The total immune serum inactivated vaccinia virus dilutions higher than 1/400; 2. Soluble globulins inactivated vaccinia virus dilutions higher than 1/80; 3. Insoluble globulins inactivated vaccinia virus dilutions higher than 1/20.

Comparative study of the in vivo action of serum immunoglobulin fractions from total immune serum on the vaccinia virus showed the following : 1. Subcutaneous administration of immune serum and subsequent inoculation of the vaccinia virus did not determine modifications of the characteristic eruption. 2. The same results were recorded also after administration of the soluble globulin fractions. 3. On the contrary, injection of soluble immunoglobulins followed by inoculation of the vaccinia virus caused a discrete, abortive, benign vaccinia eruption, which healed swiftly.

These data lead the authors to advocate administration of a dose of insoluble globulins before human antivariola vaccination, thus suppressing the inconveniences and sometimes severe complications caused by this vaccination.

89. N. CAJAL, C. TULPAN. Influence of the vaccinia virus on the production of hemolysins in the organism of the rabbit. Comunicările Acad. R. P. R. 1951, 1, 3, 291.

Inoculation of the vaccinia virus to rabbits before, during and after intravenous injection of sheep red blood cells induces a high increase in the titer of serum hemolysins.

The highest titer is observed in the animals vaccinated 60 days before injection of the red blood cell suspensions (5.41 times the titer of the hemolysins of the control animal).

In view of these results, the authors propose that for the preparation of hemolytic sera, rabbits previously inoculated with the vaccinia virus should be used.

90. N.CAJAL, D.SARATEANU. Influence of the vaccinia virus on the titer of antityphoid agglutinins in rabbits immunized against the Eberth bacillus. Comunicările Acad.R.P.R., 1951, 1, 6, 517.

Inoculation of the vaccinia virus to rabbits before, during and after administration by peritoneal route of anti-typhoid-paratyphoid vaccine doses leads to a high increase in the titer of agglutinins O in the blood of the animal.

Agglutinins H were slightly increased only in the animals inoculated 50 - 60 days previously with the vaccinia virus.

In view of these results, for the preparation of specific anti-microbial agglutinating sera, animals previously inoculated with the vaccinia virus should be used in order to obtain sera with higher titers.

91. A.DEREVICI, E.SORD, H.VEINER, R.KAHANE, M.GRUJA. The action of parenterally administered hyaluronidase on vaccinia virus cultures in the rabbit skin. Comunicările Acad.R.P.R., 1951, 1, 7, 659-661.

A study was carried out on the action of testicular hyaluronidase, after parenteral administration to rabbits inoculated in the skin with the vaccinia virus.

Administration of hyalurodinase 24 hours before

or at the same time as the inoculation does not significantly modify the titer of the vaccinia strain, either from the qualitative or from the quantitative view-point.

Injection of the enzyme 24 hours after the inoculation causes an increase in the titer and amount of product collected.

The results of these experiments are of practical use in the preparation of large amounts of vaccinia lymph.

92. N.CAJAL, I.ADERCA, R.CAPRARU. Influence of the vaccinia virus on the development of the organism of the rabbit. St.cerc.inframicrobiol., microbiol.,parazitol., 1952, 3, 1-2, 213.

A comparative study was carried out on the evolution of the body weight in a group of 49 rabbits inoculated intradermally with the vaccinia virus, and an equal number of control animals. After 4 months, the average increase of the inoculated animals was 319 gm as compared to 78 gm in the control animals. After this period, no difference was observed, the inoculated animals remaining with the ponderal advance obtained. The authors propose the application of the antivariola vaccine in meat producing animals.

93. S.MATEESCU, I.BIRZU, R.CAPRARU. The action of ionizing radiations on inframicrobial immunity.
I - The action of Roentgen rays on experimental antivaccinia immunity. St.cerc.inframicrobiol., microbiol.,parazitol., 1957, 8, 4, 551.

A study was carried out on the effect of Roentgen radiations, after a single dose of 600 r, 180 kw, 10 mA over the entire body of the animal, on immunity established following vaccinia infection in rabbits. Under the experi-

mental conditions of the authors, total irradiation with an unique dose of 600 r, before or after anti-vaccinia immunization does not modify the acquired resistance as compared to the controls.

The titers of the sero-neutralising antibodies likewise show that irradiation does not influence the evolution of these antibodies.

The data obtained in the course of their experiments with the vaccinia virus showed that, at least for this virus, differences exist between the antibacterial and antiviral mechanism of immunization.

94. N.CAJAL, Y.COPELOVICI. The influence of cortison acetate on vaccinia infection and immunity. Report read at the Session of the Institute of Inframicrobiology of the R.P.R.Academy, February 4, 1958.

Experiments carried out on 28 adult rabbits, inoculated by cutaneous route with the vaccinia virus and treated with cortison acetate (0.005 gm/kg body weight) for a variable period, showed that under the action of the hormonal product the incubation of the disease is delayed and the intensity of the skin lesions diminished. No difference was observed between the behaviour of the animals treated before the experimental infection and those treated with the same amount of cortison after inoculation of the vaccinia virus.

Anti-vaccinia immunity was not modified by administration of the suprarenal hormone. This finding would justify continuing the experiments with a view to introducing eventually, in current practice, anti-variola vaccination under protection of cortison, in order to diminish vaccinia lesions.

IV

VIRAL HEPATITIS

95 - 180

95. ACAD.ST.S.NICOLAU, C.ZAMFIR, R.PORTOCALA, G.BALMUS, M.SEPEANU, N.CAJAL, I.NICOLAESCU, E.TURCU, S.MATEESCU. Epidemic hepatitis or epidemic hepatitides ? Buł.Stiinț.Acad.R.P.R. Sect.Med. 1950, 2, 9, 1103.

Following the epidemiologic, immunologic and histopathologic study of a hepatitis epidemic that broke out in the R.P.R. in 1948, the conclusion was drawn that this hepatitis out-break was caused by a virus, other than that described by Nicolau and his co-workers in the 1941-1944 epidemic.

These conclusions were reached on the following basis : the seasonal incidence; absence of cross-immunity and particularly the histo-pathologic character.

Indeed, Botkin's hepatitis has a maximum incidence in the autumn months, whereas the hepatitis cases studied by the authors were prevalent in the spring months.

Some of the patients in the recent epidemic suffered from Botkin's hepatitis during the 1941-1944 epidemic; therefore, demonstrating the absence of cross-immunity between the two epidemic hepatitides.

The histo-pathologic aspect of the liver during the last epidemic (biopunctures and necropsies) showed a net difference as compared to the histo-pathologic picture described during the 1941-1944 epidemic. Thus, Botkin's hepatitis is a serous disease, whereas the recent hepatitis has a sclerous aspect, with rare karyokinesis and without any cellular inclusions. In view of these findings, it is possible to assert that there is not an epidemic hepatitis but inframicrobial epidemic hepatitides.

96. ACAD.ST.S.NICOLAU. Viral epidemic hepatitides. St-cerc- inframicrobiol., 1950, 1, 1, 33.

A synthesis of the author's conception and that

of his school on the plurality of viral icterigenic hepatitis.

Three types of viral hepatitis are to be found in the Rumanian People's Republic : viral icterigenic hepatitis, identified as Botkin's disease (Nicolau and co-workers, 1943-1944), sclerogenous viral hepatitis (Nicolau and co-workers, 1950) and homologous serum hepatitis.

Details are given regarding the first two types, particularly referring to the etiologic agent, experimentation and histopathologic characters.

Stress is laid on the difference between Botkin's hepatitis and sclerogenous hepatitis, evidenced by the epidemiologic characters, the absence of cross immunity and especially histopathologic alterations at the level of the liver (the presence of inclusions, monstrous nucleoles and multiple karyokineses in Botkin's hepatitis; the absence of inclusions and abundant proliferation of the connective tissue in sclerogenous hepatitis).

97. N.CAJAL. Inframicrobial epidemic hepatitis. "Actualități în boli contagioase", Ed.de Stat, 1951, 175.

A general report on the problem of epidemic hepatitis, stress being laid on the Rumanian works, which demonstrate the plurality of hepatitis viruses. Details are given on the etiology, experimental investigations, properties, morphopathology of the viruses, etc.; on Botkin's hepatitis, sclerogenous hepatitis and homologous serum hepatitis.

98. N.CAJAL, S.MATEESCU, E.LISSIEVICI. Hemagglutination by the sclerogenous inframicrobial epidemic hepatitis virus. "Comunicările Acad.R.P.R.", 1951, 1, 8, 817.

The sclerogenous epidemic hepatitis virus in-

tensely agglutinates the red blood cells of the hen and guinea pig, and to a lesser extent those of sheep and man (Group O), and very slightly the red blood cells of the frog.

Liver fragments taken from 4 lethal cases of epidemic hepatitis were used as antigen and, maintained in glycerin at $+4^{\circ}\text{C}$, could still be employed in the hemagglutination reaction after 2 months.

The serum of convalescents inhibits the hemagglutination reaction up to a dilution of 1 / 1280.

99. N. CAJAL, S. MATEESCU. Several properties of the sclerogenous inframicrobial epidemic hepatitis virus.
St. cerc. inframicrobiol., microbiol., parazitol.,
1951, 2, 4, 123.

On the basis of the agglutination reaction with hen red blood cells and previous experiments in which the hemagglutinating property of the sclerogenous hepatitis virus was demonstrated, it was possible to determine certain properties of this virus.

Thus, a temperature of -16°C after several successive freezings and thawings does not modify the virulence of this virus, which also resists to a temperature of $+56^{\circ}\text{C}$ during 255 minutes, and to boiling temperature almost 4 minutes.

Glycerin combined with the action of low temperatures ($+4^{\circ}\text{C}$) preserves the virus at least 95 days, increasing even the initial virulence of the preparation, the titer of the virus thus kept being maintained at the same value at least 80 days. The virus does not diffuse in glycerin.

Untraviolet light begins to attenuate the virus after 5 minutes and inactivates it only after 100 minutes irradiation.

Thus, the virus of sclerogenous inframicrobial epidemic hepatitis is demonstrated to be, by certain of its properties, more resistant to certain physical agents than other known viruses. According to the authors, these proper-

ties must be interpreted in the sense of a possible discrepancy between the pathogenic and hemagglutinating potential, a discrepancy also reported by Hirst for the influenza virus.

100. N.CAJAL, S.MATEESCU, E.LISSIEVICI. Study of hemagglutination in sclerogenous epidemic hepatitis. Report read at the Session of the Society of Medical Sciences, December 27, 1951.

The hemagglutination reaction induced by the sclerogenous inframicrobial epidemic hepatitis virus was studied, using in this test red blood cells from various animal species : hen, guinea pig, man (group O), sheep and frog. The virus constantly agglutinated the red blood cells of hens and guinea pigs, to a lesser extent those of sheep and man and hardly at all those of frogs. The reaction is specifically inhibited by the serum of epidemic hepatitis convalescents.

The authors likewise studied the effect exercised by various physical and chemical factors on the hemagglutination potential of the sclerogenous epidemic hepatitis virus and observed attenuation of the hemagglutinating potential, following high temperatures, ultraviolet light, filtration through the Seitz and Berkefeld filters, whereas the cold or storage in glycerin maintained its potential.

To conclude, the hemagglutination and hemagglutination-inhibition test is recommended for the diagnosis and study of sclerogenous inframicrobial epidemic hepatitis.

101. D.HORTOPAN, N.FOARTA. Hepatic cirrhosis and its etiology. St.cerc.inframicrobiol.,microbiol.,parazitol.,1951, 2, 1-2, 193.

The infectious hepatitis epidemic, that appeared in the town and district of Turnu Severin revealed numerous cases

of jaundice, with immediate or late evolution towards cirrhosis. The primordial role of epidemic hepatitides in the etiology of cirrhosis is clearly demonstrated and the latter should be considered chronic evolutive hepatitis of viral nature.

Investigations, carried out for a period of one year on cirrhosis cases hospitalized in the medical wards of the no.1 Hospital in Turnu Severin, showed on the one hand that 80% of the patients suffered from infectious hepatitis in their past history, and on the other that chronic evolutive viral hepatitis can take on all the anatomo-clinical forms of cirrhosis. The evolution of the cirrhogenous process was followed up histologically by means of needle biopsy.

The above findings impose a radical change of the conception according to which hepatic cirrhosis are due to alcohol intoxication. In hepatic sclerosis, alcohol only plays the part of an adjuvant, like avitaminosis or protein deficiencies. There is no case of cirrhosis without infectious hepatitis virus. Consequently, infectious jaundice should be considered as a severe disease, whose late sequelae may render it extremely grave even when the initial infection had a sub-clinical character. The treatment should be complete, the diet adequate, with prolonged rest and long-term medical supervision.

102. ACAD.ST.S.NICOLAU, R.PORTOCALA, D.DRAGOMIRESCU, N.CAJAL, R.DINU. Morphologic data on the sclerogenous epidemic hepatitis virus studied by means of the electron microscope. Comunicările Acad.R.P.R.1951, 1, 8, 895.

The sclerogenous hepatitis virus, examined in the electron microscope, appears in most cases - when the germs are isolated - in the form of more or less regular, small spherules.

Their average size is 90 - 100 m/μ, maximum size 120 m/μ and minimum size 80 m/μ.

When the germs are ranged in twos or threes,

they appear in a flat discoidal form, recalling up to a certain extent the aspect of red blood cells grouped together like a pile of coins. The size of the sclerogenous hepatitis virus is approximately twofold smaller than that of the Botkin hepatitis virus.

These data constitute an additional argument confirming the previously established concept of the plurality on inframicrobial epidemic hepatitides.

103. R. PORTOCALA. Investigations on epidemic hepatitides.

Report read at the inauguration of the Institute of Inframicrobiology (July 12, 1951.)

A brief description of the contribution of the Rumanian School of Inframicrobiology to the study of epidemic hepatitis.

These investigations resulted in identification of the hepatitis epidemic which broke out in our country before 1948, with Botkin's hepatitis; establishment of the viral nature of this disease by histopathologic studies, the finding of specific inclusions, experiments on laboratory animals and detection of inframicrobes; establishment of histologic diagnosis criterions based on the presence of the I.N.K. triad (I = intranuclear inclusions, N = giant nucleoli, K = multiple karyokinesis); listing of catarrhal icterus together with Botkin's hepatitis; determination of conditions in which epidemic outbreaks appear; detection of cases of unapparent disease; data regarding the transmission of the disease to animals.

In sclerogenic hepatitis the following were established: the histopathologic appearance, which definitely differs from that of Botkin's disease; clinical differences between the two hepatitides; application of the hemagglutination reaction; certain properties of the virus; study of peripheral blood; determination of nucleic acids in the sera of the patients.

104. N.CAJAL, S.MATEESCU, F. ~~LIS~~SIEVICI, G.POPESCU, M.CEPLA-
 NU, R.CAPRARU. Distribution of the sclerogenous
epidemic hepatitis virus in the human body.
 St.cerc.inframicrobiol.,microbiol.,parazitol.,
 1952, 3, 1-2, 101.

By means of the hemagglutination and hemagglutina-
 tion-inhibition tests, it was possible to demonstrate that
 the sclerogenous epidemic hepatitis virus is to be found
 constantly in high concentrations in the liver, duodenum,
 pancreas and kidneys and in smaller amounts in the jejuno-
 ileon.

The virus was not constantly found in the stomach,
 large intestine, suprarenal capsules, spleen, lungs, brain,
 cerebellum and spinal cord ; it is usually absent in the
 thyroid, testicles and lymph nodes.

The sclerogenous epidemic hepatitis virus is there-
 fore a virus with viscerotropic affinities, but can in cer-
 tain cases be found in ectodermal tissues, having therefore
 also pantropic possibilities.

105. ACAD.ST.S.NICOLAU, N.CAJAL, C.ALBU, M.CEPLEANU.
Cultivation of sclerogenous epidemic hepatitis
virus in embryonated eggs. St.cerc.inframicro-
 biol.,microbiol.,parazitol., 1952, 3, 1-2, 29.

Inoculation of the sclerogenous inframicrobial
 epidemic hepatitis virus on the chorio-allantoic membrane,
 yolk and amniotic sacs of the chick embryo, induces after
 the third passage, constant lesions in the embryo, which
 however lives until hatching.

The most interesting lesions are to be found in
 the liver. They become apparent three days after inoculation
 and become more severe as the moment of hatching approaches.
 Only after inoculation, inconstant, congestive, infiltrative
 and proliferative lesions can be observed on the chorio-
 allantoic membrane.

After the 9th passage with antigens from the liver of embryos and from the whole embryo, positive hemagglutination reactions are obtained, inhibited by the serum of convalescents of sclerogenous inframicrobial epidemic hepatitis.

106. ACAD.ST.S.NICOLAU, C.ZAMFIR, N.CAJAL, G.BALMUS, M.SEPEA-
NU-FIRICA, S.MATEESCU, E.TURCU, I.NICOLAESCU.

Lesions of the liver in inframicrobial sclerogenous epidemic hepatitis. Bul.Stint.Acad.R.P.R. Sect. St.Med. 1952, 4, 1, 105.

In the course of the study of a new type of viral hepatitis, i.e. inframicrobial sclerogenous epidemic hepatitis identified in the R.P.R. in 1949, the histopathologic modifications induced by this virus at the level of the liver were described. Investigations were carried out on 63 cases; 44 biopsies were performed according to the Röhölm Iversen method and 19 necropsies; these examinations were carried out at various stages, beginning from the first week of the disease until the 28th.

On the paraffin embeded liver sections, stained by various methods, it was possible to detect, in the first phases of the disease, the presence of massive infiltrations with prevalent polynuclear and mononuclear elements; in a more advanced stage, the mononuclears became predominant. However, in this case, when the infiltration on all the sections is characterized by mononuclear cells, there may exist zones of probably recent tissular infection, which take on the aspect of acute inflammation with predominant polynuclear leukocytes. Moreover, during the initial period of the disease, marked hyperemic modifications can be observed, contrasting strongly with the images encountered in Botkin's inframicrobial hepatitis. The investigations of the authors likewise show that sclerogenous hepatitis is fundamentally different from the latter. The processes of multiplication, characterized in

Botkin's hepatitis by numerous karyokineses, are extremely rare in this viral hepatitis, in which pseudo-giant cells, that appear after swift amitotic multiplication, are prevalent. Nuclear inclusions were not detected either in this stage or in a more advanced stage of the disease.

The general aspect of the liver suffers greater modifications with the evolution of the disease. The glandular tissue has a tendency to be replaced partly or wholly in certain areas by a juvenile connective tissue. In severe cases, with a lethal end, the sclerous neoformation tissue may replace up to 3/4 of the surface of the section examined.

Numerous newly formed bile canaliculi furrow this tissue whose hepatic origin is unrecognizable. Certain cells in the microscopic field show varied degenerescence (vacuolar aspect, necrobiosis with picnotic nucleus, achromatic degenerescence). The hepatic cell often completely loses its characteristic morphologic aspect, presenting the aspect of a ghost cell.

107. ACAD. ST. S. NICOLAU, N. CAJAL. The latest investigations in the Rumanian People's Republic on viral epidemic hepatitides. Rev. St. Med. Med. Internă, 1952, 4, 1, 12.

Data regarding the investigations carried out in the R.P.R. on the hepatitis epidemic, that started in 1948, and which revealed the plurality of viral epidemic hepatitides. A description is given, particularly of the results obtained following morphologic study in the electron microscope, of the properties of the virus, the histopathologic aspect, the clinical and hematologic picture of sclerogenous hepatitis.

Thus, the hemagglutinating property, the action of certain physical and chemical agents on the sclerogenous virus, its cultivation and the alterations produced in the embryonated egg, the distribution of the virus in the human organism, hepatic lesions in the course of the natural disease, the clinical and epidemiologic characters of sclerogenous he-

patitis, and the hemo-medullogram aspects are dealt with in detail.

The data obtained following the latest investigations in the R.P.R. establish the characteristics of sclerogenous hepatitis and differentiate it from the other known hepatitides, thus lending support to the plurality of viral epidemic hepatitides.

108. ACAD.ST.S.NICOLAU, N.CAJAL. Etiologic, histopathologic and immunologic data in epidemic viral hepatitides.
Paper read at the "Rumanian Soviet Medical Days",
17 April 1952.

A presentation of the known data in literature, starting with the year 1885 when Botkin emitted the hypothesis of the infectious etiology of catarrhal icterus, with special stress on the etiology, histopathology and immunology of the disease.

The classical findings are completed with the results obtained by the authors, which evidence the plurality of viral epidemic hepatitides. A description is given of the characteristics of Botkin's hepatitis and especially of sclerogenous hepatitis, a nosologic entity recently identified in the R.P.R. Stress is laid on the differences that reside particularly in the histopathologic picture (the presence of the inclusion-nucleole-karyokinesis triad in Botkin's hepatitis; the absence of inclusions and abundant proliferation of connective tissue in sclerogenous hepatitis) and on the absence of cross immunity.

Data regarding the properties of the virus and experimentation are likewise expounded, special mention being made of the results obtained by the authors in their investigations.

109. N.CAJAL, S.MATEESCU, G.POPESCU. EL.LISSIEVICI, M.CEPLEA-

NU: Data obtained by means of the hemagglutino-inhibition test in epidemic sclerogenous hepatitis. St.cerc.inframicrobiol.,microbiol.,parazitol., 1953, 4, 1-2, 67.

The hemagglutino-inhibition test with the serum of hepatitis patients (1,004 cases), using as antigen liver emulsions from a man who died of this viral disease, was positive in 81.38% of the cases studied during the height of the disease. A titer higher than 1/40 is considered positive.

A number of 238 tests were performed with the sera of persons in contact with the hepatitis patients, yielding 42.8% positive results. In 382 healthy persons, positive results were found in 12.82% of the cases, which is accounted for by the occult immunizations in the course of the clinically unapparent disease. Hemagglutino-inhibiting antibodies were experimentally revealed in guinea pigs and rabbits, inoculated with the hepatitis virus.

110. N.CAJAL, EL.LISSIEVICI, S.MATEESCU, G.POPESCU, Y.COPE-

LOVICI, R.CAPRARU. Duration of elimination of the epidemic hepatitis virus in patients and convalescents. St.cerc.inframicrobiol.,microbiol.,parazitol., 1953, 4, 3-4, 271.

The duration of virus elimination in 445 patients and convalescents of epidemic hepatitis was studied. The presence of the virus was tested in the feces and urine of 219 patients, only in the urine of 110 patients and in the naso-pharyngeal washings of 116 patients. The examinations were repeated several times in 51 patients, in order to establish the evolution of the specific elimination of the virus.

The hemagglutination and hemagglutination-inhibition reactions were performed with centrifuged emulsions

of feces, urine and naso-pharyngeal washings as antigens; for the hemagglutination-inhibition test standard anti-Botkin and anti-sclerogenous sera were used.

The investigations carried out showed that the hepatitis virus is constantly eliminated through the feces, more seldom through the urine and only exceptionally in the naso-pharyngeal secretions. Elimination of the virus may take place during the disease up to a given moment, more or less distant from the moment of clinical recovery. In certain cases, the virus can still be eliminated after this period (according to the investigations of the authors up to 255 days). Elimination of the virus after "clinical recovery" demonstrates that the patient, considered as healed, continues to have an asymptomatic, torpid disease.

Prof. N. CAJAL, S. MATEESCU, E. LISSIEVICI, G. POPESCU, M. CEPLEANU, Y. COPELOVICI, R. CAPRARU.

Application of the hemagglutination and hemagglutination-inhibition tests in the diagnosis of inframicrobial epidemic hepatitis.

Rev. St. Medicale, Med. Internă, 1953,

In the sera of epidemic hepatitis patients, hemagglutination-inhibition bodies were revealed by means of the hemagglutination and hemagglutination-inhibition test, the antigen used being an emulsion of hepatitis liver. The test was considered positive in titers higher than 1/40.

By means of this test, it is possible to establish the virus type (Botkin or sclerogenous), the clinically inapparent cases (42.85%), as well as the duration of virus elimination through the urine and feces.

112. R.DINU, M.BOTEZ. Morphologic data and physio-pathologic interpretation of certain neurologic and psychic disturbances observed in the present epidemic of inframicrobial hepatitis. St.cerc.inframicrobiol., microbiol., parazitol., 1953, 4, 3-4, 291.

A study was carried out on the neuro-psychic disturbances observed in 200 cases of epidemic hepatitis (with a relatively normal evolution), hospitalized during the second half of 1952. The anatomo-pathologic aspect of the nervous system was likewise studied in 9 lethal cases, with neuro-psychic phenomena manifested during the disease.

In the preicteric phase, 53% of the patients exhibited nervous, psychic or mixed disturbances, asthenia, faintness and dizziness, diffuse or localized head-ache, disturbances of sleep and changes of character. The increased frequency of these disturbances in epidemic hepatitis patients led to the identification of a special onset, i.e. forms with a neuro-psychic onset.

In the icteric phase, neuro-psychic disturbances are encountered in 32% of the cases and are manifested by asthenia, head-ache, diminution of the osteo-tendinous reflexes, diminution and in some cases abolition of the photo-motor reflex, vestibular symptoms, irascibility and anxiety, nystagmus (in 5% of the cases).

Comparative study of the epidemic hepatitis cases and 25 cases of obstructive jaundice led to the conclusion that in obstructive jaundice the predominant neuro-psychic syndrome is depression and in epidemic hepatitis, anxiety.

During convalescence, epidemic hepatitis may constitute the starting point of anxiety neurosis.

The anatomo-pathologic aspects encountered at the level of the nervous system express dynamic circulatory disturbances : stasis, oedema, meningeal or parenchymatous micro-hemorrhagies.

The disturbances of the nervous system during epidemic hepatitis, as well as the role of the temporary pathologic

relations in the delayed appearance of hepatic dysfunctions which, in the opinion of the authors, is of neurogenic origin, are interpreted from the point of view of Pavlov's nervist conception.

113. ACAD.ST.S.NICOLAU, N.CAJAL, M.CEPLEANU, C.ALBU. Different behaviour of certain sclerogenous hepatitis and Botkin's hepatitis viruses after inoculation on the chorio-allantoic membrane of the chick embryo. St.cerc.inframicrobiol.,microbiol.,parazitol., 1953, 4, 1-2, 207.

A comparative study was carried out on the behaviour in the embryonated egg of 3 strains of the sclerogenous hepatitis virus (M, F and Stef.) and one strain of Botkin hepatitis virus (A), after allantoic inoculation. The M and F sclerogenous hepatitis strains permit hatching, whereas the Stef. strain brings about the death of 90 per cent of the chick embryos within 5 to 6 days after inoculation. The Botkin hepatitis virus strain (A) kills the embryos in 70 per cent of the cases (13 passages), the embryos being small, insufficiently developed and with an enlarged and pale heart. Total embryo emulsions and inconstantly those of liver and chorio-allantoic membrane produce hemagglutination, specifically inhibited by the sera of patients suffering from the same type of hepatitis.

114. ACAD.ST.S.NICOLAU, N.CAJAL, S.MATEESCU, M.CEPLEANU, E.LISSIEVICI, Y.COPELOVICI. Differentiation of Botkin's hepatitis from sclerogenous hepatitis by means of the hemagglutination-inhibition test. Comunicările Acad.R.P.R. 1953, 3, 3-4, 133.

It was possible to reveal by the hemagglutination and hemagglutination.inhibition tests definite differences between the Botkin hepatitis virus and the sclerogenous hepatitis virus ; the sera of sclerogenous

hepatitis cases, which constantly inhibited agglutination with the homologous virus, did not inhibit that produced by the Botkin virus; moreover, the sera that inhibited hemagglutination with the Botkin virus, did not inhibit that produced by the sclerogenous virus.

These data confirm, once again, the plurality of icterigenic hepatitis viruses.

115. R. PORTOCALA, I. MESROBEANU, N. CAJAL, M. MITRICA, E. PODHORSKI.

Determination of nucleic acids in the sera of patients with epidemic sclerogenous hepatitis.

St. cere. inframicrobiol., microbiol., parazitol.,
1953, 4, 3-4, 283.

Determination of nucleic acids was performed by means of an original technique in 128 sera, 46 of which were collected from patients with epidemic sclerogenous hepatitis, 37 from patients with various affections, 10 from pregnant women and 35 from healthy persons.

The following results were obtained : 0.77-1.97 g% in normals; 0.82 - 1.99 g % in various affections and 3.5-4.4 g % in pregnant women; in sclerogenous hepatitis cases, the following values were obtained: 1.02 - 2.50 g % in benign cases, 1.23 - 3.50 g % in medium cases and 2.28 - 6.25 g % in severe cases. In the cases with catarrhal icterus, the results ranged between 0.50 and 1.80 g %.

The method used in the determination of nucleic acids in the sera of patients with epidemic hepatitis made it possible to obtain an accurate image of the degree of destruction of the hepatic cells and to control the evolution of the disease.

116. I.ADERCA, G.POPESCU. Research on the elaboration of antibodies in animals inoculated with the sclerogenous epidemic hepatitis virus. St.cerc.inframicrobiol.,microbiol., parazitol., 1954, 4, 1-2,85.

The curve of the increase of anti-hemagglutinating antibodies in rabbits inoculated with the sclerogenous epidemic hepatitis virus is studied. Inoculations were performed by intraperitoneal route with 0.5 ml 1/10 diluted antigenic hepatic emulsion, at 7 - 10 days interval.

The curve shows an increase of antibodies followed by a decrease, even when inoculations are continued.

This decrease is followed by a new increase at a higher level than at first. If inoculations are continued, the titer decreases again, after which a higher threshold is reached, followed by a new decrease. This decrease shows the insufficiency of a too intensive immunization, when the law of intervals is not respected.

117. P.STROESCU, G.DANIELESCU, I.ADERCA. Unequal distribution of the epidemic hepatitis virus in the human liver. St.cerc.inframicrobiol.,microbiol., parazitol., 1953, 4, 3-4, 323.

At the examination of the liver collected from lethal cases of epidemic hepatitis, the presence of certain zones which differ from the macroscopic and microscopic view-points was observed. These zones correspond to a process of congestion, to fatty degenerescence and sclerosis.

The virus content in the various zones, revealed by the hemagglutination reaction, increases from the zone of congestion towards the zone of fatty degenerescence, then decreases in the sclerosis zone.

Polymorphism of the hepatic lesions is more frequent in the adult than in children.

These findings draw attention to the possibility of making errors in the diagnosis based on hepatic biopsies.

118. N.CAJAL. Laboratory diagnosis of viral epidemic hepatitis. St.cerc.inframicrobiol.,microbiol., parazitol., 1954, 5, 1-2, 41.

After briefly reviewing the usual non-specific tests used in the diagnosis of epidemic hepatitis, the author describes in detail certain methods of etiologic diagnosis and particularly : hemagglutination and hemagglutination - inhibition (HA and HAI), agglutination of virus charged bacteria, complement fixation, intradermoreaction with the attenuated virus and hepatic biopuncture. Stress is laid on the advantages and disadvantages of each of these methods, and hemagglutination and hemagglutination-inhibition with the hepatic antigen is advocated for the current diagnosis of the disease.

119. N.CAJAL. Investigations on virus carriers in viral epidemic hepatitis. Report read at the general Session of the Hungarian People's Republic Academy of Sciences, June 1954.

By means of hemagglutination and hemagglutination inhibition it was demonstrated that some epidemic hepatitis patients eliminate the virus through the feces for a shorter or longer period after the end of the clinical disease.

In 80 % of the 445 patients investigated the virus was found in the feces only during the first days of the disease or at the utmost in the last week during recovery, whereas in the remaining 20 % the virus was found from 3 to 25 days after clinical recovery. Exceptionally, the virus was detected still later, on the 98th, 180th and 205th day respectively after the beginning of convalescence.

Interpreting these findings in the light of certain results obtained in experiments with other viruses and particularly in those carried out by means of the method of

conditioned reflexes, it may be considered that in the case of virus carriers it is a question of continuation of the disease in an asymptomatic form.

The epidemiologic importance of the results of these investigations is discussed.

120. R.DINU. The morpho-physiopathology of viral epidemic hepatitis. St.cerc.inframicrobiol.,microbiol., parazitol.,1954, 5, 1-2, 55.

A synthesis of the anatomical data which differentiate Botkin's hepatitis from sclerogenous hepatitis, the two forms most frequently encountered in the R.P.R. The physiopathological interpretation of morphologic manifestations in hepatitis is briefly outlined, considering the organism as a whole, reacting with all its components against hepatitis viruses. Stress is laid on the role and functional state of the central nervous system, the factor of correlation and adaptation upon which the functions of the entire organism depend, both in normal and in pathologic states.

121. S.BRUCKNER, G.MARINESCU. Epidemic hepatitis in children. St.cerc.inframicrobiol.,microbiol.,parazitol.,1954, 5, 1-2, 23.

A clinical and laboratory study was carried out on 1678 cases of epidemic hepatitis. The highest incidence was observed in the school age-group. Numerous cases were also reported in the age-group 0-1 year (214 cases, i.e.12.6 per cent). The main clinical signs of epidemic hepatitis in children are reviewed and illustrated statistically.

The epidemiologic survey showed that in breast-fed infants, a great number of cases (about 55 per cent) were inoculation hepatitides. The clinical evolution differs from that of the adult, as certain signs characteristic of the disease in children may be observed, as well as the frequent

affection of the other organs (interstitial pneumonia), which demonstrates a participation of the entire organism. The prognosis is much more severe than in the adult.

The laboratory examinations (functional and hepatic tests, hemogram, urine analyses) make it possible to diagnose the subclinical forms and give, to a certain extent, an orientation for the prognosis.

Certain pathogenic and anatomo-clinical aspects are stressed, among which the influence of hepatic fibrosis in inducing hematemesis and melena, of which most infants die, the importance of nutritional disturbances and various deficiencies in favouring hepatic lesions, as well as the state of anergia and the prognosis of hepatitis in infants.

122. I.IVAN, N.CAJAL, I.SPINU. The epidemiology and prophylaxis of viral epidemic hepatitis. St.cerc. inframicrobiol., microbiol., parazitol., 1954, 5, 1-2, 75.

Epidemiologic investigations on the viral hepatitis epidemic in our country are described and completed with data from specialty literature concerning the epidemiology of viral epidemic hepatitides.

Stress is laid on the ascending character of the affection (ninefold more cases than endemo-epidemic typhoid fever cases in 1953) as well as on the morbidity curve which stayed level, thus differing from ~~other~~ epidemics as well as the first years of the present epidemic. The following morbidity rate per age group was recorded during the first 9 months of 1953 : 0-3 years = 3.6%; 4-6 years = 4.4% ; 7-15 years = 12% and over 15 = 80%.

In 1952, lethal epidemic hepatitis cases represented 34% of the total ~~number~~ of deaths in the clinics of contagious diseases in Bucharest.

Prophylactic measures consisted in disinfection which varied according to the familial or collective character

124. ACAD.ST.S.NICOLAU, N.CAJAL, G.MARINESCU, R.DINU, M.CEPLEANU, M.BOTEZ. Morpho-pathologic researches on infra-microbial epidemic hepatitides. St.cerc.inframicrobiol.,microbiol.,parazitol., 1954, 5, 3-4, 191.

On the basis of the morpho-pathologic study of 66 necroptic cases of epidemic hepatitis (25 Botkin's hepatitis and 41 sclerogenous hepatitis) it was observed that intense lesions are to be found in the liver, in which localizations chiefly occur, in the kidneys, suprarenal capsule and pancreas. Besides the testicles, ovaries and sometimes the thyroid, all the organs exhibit more or less significant lesions. In opposition to the liver, in which non-specific and specific lesions are to be found (intranuclear inclusions in Botkin's hepatitis, massive sclerosis in sclerogenous hepatitis), in the other organs only non-specific, infiltrative, degenerative and proliferative lesions are observed.

In many cases, lesions are also encountered at the level of the central nervous system, accounting for the neuro-psychic disturbances in the course of the disease and disorders in the organization and defence functions against the infectious process.

125. I.ADERCA, G.DANIELESCU. Study of anti-hemagglutination antibodies in the sera of normal rabbits. St.cerc.inframicrobiol.,microbiol.,parazitol.,1954, 5, 3-4, 383.

Experiments on 126 rabbits showed that normal rabbit serum inhibits the hemagglutination reaction with the influenza virus and epidemic hepatitis viruses.

The rabbits were divided into three groups, according to their general state of health, nutrition and upkeep.

All the sera of normal rabbits have the property of inhibiting hemagglutination caused by the Botkin and the sclerogenous hepatitis viruses in titers that range between 0 (a single case) and 1/320. The serum of normal rabbits inhibits

of the focus.

Special stress is laid on the measures that should be taken to prevent inoculation hepatitis.

123. S.MATEESCU. Virus carriers in viral epidemic hepatitis.

St.cerc.inframicrobiol.,microbiol.,parazitol., 1954,
5, 1-2, 49.

One of the most important problems that should be studied in order to establish an effective prophylaxis in epidemic hepatitis is the penetration, spread and elimination of epidemic hepatitis viruses in the organism. Previous researches showed that, as a rule, there is no difference as regards elimination of the virus in cases of Botkin's epidemic hepatitis and sclerogenous epidemic hepatitis. Moreover it has been found that the patient suffering from epidemic hepatitis is not contagious only in the preicteric period, but also in the first days after the appearance of the jaundice and can eliminate the virus for a shorter or longer period after the onset of the disease. Thus, next to cases with negative urine and feces in the first week, there are cases in which the virus is eliminated in the feces up to 205 days after the onset of the disease.

In the case of hepatitis virus carriers, the disease probably continues without detectable clinical symptoms at the end of the apparent disease. The virus identified in the feces and urine confirms the existence of the disease, since to be eliminated in a sufficient amount for to be revealed it must multiply actively in certain sensitive tissues, capable of offering the necessary metabolic conditions.

Stress is laid on the existence of temporary epidemic hepatitis virus carriers, a fact which should make it possible to take judicious anti-epidemic measures.

to a greater extent hemagglutination caused by the influenza virus. The titers of the anti-hemagglutinating potential of the sera depend upon the diet and upkeep of the animals.

126. IN. CAJAL, I. ADERCA, Y. COPELOVICI and co-workers. Hemagglutination in the study of epidemic hepatitis. Paper presented at the First Conference of Czechoslovakian Virologists, Smolnice, October 1955.

A synthesis on the results obtained by the Institute of Inframicrobiology of the R.P.R. Academy in the study of sclerogenous hepatitis and Botkin's hepatitis by means of hemagglutination and hemagglutination inhibition. Emphasis is laid on the importance of this method for laboratory diagnosis (the tests were done in 1624 cases), for establishing the presence of the virus in various organs, for estimating the duration of virus elimination (445 cases), for determining the stability of certain properties of the viral hemagglutinin, which seems to belong to the group of soluble agglutinins, etc.

Non-specific factors of a lipid or phospholipid nature, that intervene in hemagglutination and appear following autolysis, are described.

Starting from 1954, the gradual appearance of hepatitis cases with partial or total loss of the hemagglutinating property are reported and the phenomenon accounted for by spontaneous variability of the virus in natural conditions.

127. ACAD. ST. S. NICOLAU, N. CAJAL. Interpretation of the plurality of inframicrobial epidemic hepatitis in the light of virus spontaneous variability.

St. cerc. inframicrobiol.; microbiol.; parazitol.; 1955, 16, 43-4; 325. Rev. Sci. Méd. 1956, 15, 2, 73.

Starting from a number of observations made during

the last years and particularly the loss of the hemagglutinating properties of hepatitis viruses, the possible existence of hereditary variability of these viruses under natural conditions is demonstrated.

A contribution to the spontaneous modification of hepatitis viruses, observed in the Rumanian People's Republic, was probably brought about also by excessive antibioticotherapy (by exclusion of certain synergic and antagonistic germs), introduction of methionin in the current therapy of this viral disease and the passage of viruses through organisms with a variable degree of acquired resistance.

All these elements modified the outer medium in which the germ develops; the new metabolic conditions led to more or less important changes in the virus, which, transmitted to the progeny, resulted in the appearance of a new viral type.

It is assumed that the sclerogenous virus appeared following natural modification of the Botkin virus and that the non-hemagglutinating virus resulted from transformation of the sclerogenous virus.

128. I.ADERCA, G.DANIELESCU, S.DUMITRESCU, V.BOERU, N.CAJAL, I.MIHAILLEANU. Study of the non-specific factors which intervene in the hemagglutination reaction in epidemic hepatitis. St.cerc.inframicrobiol., microbiol., parazitol., 1955, 6, 1-2, 39.

The evolution of the hemagglutinating titer of liver fragments stored in glycerin at $+4^{\circ}\text{C}$ was investigated. The liver fragments were collected from patients who had died of epidemic hepatitis. In the first 30-60 days, the hemagglutinating titer decreases gradually or suddenly and is sensitive to ultra-violet light, these modifications reflecting the attenuation of the virus.

After storage (120 - 150 days) the hemagglutinating titer may increase, due to certain non-specific factors, probably liberated by autolysis of the liver fragments. This hem-

130. P.STROESCU. Histo-chemical investigations in epidemic hepatitis. Bul.Stiint.Acad.R.P.R. Sect.St.Med., 1955, 7, 1, 137.-

A comparative study was performed by means of histologic and histo-chemical methods on 11 lethal cases of epidemic hepatitis. The existence of an important fatty degenerescence of the hepatic cells was observed, more massive in sclerogenous hepatitis than in Botkin's hepatitis.

Hepatic glycogen disappeared completely and phospholipids significantly decreased in sclerogenous hepatitis. In Botkin's hepatitis, a slight decrease of glycogen and phospholipids was observed.

An increase in the amount of bile pigment and cellular iron was observed in sclerogenous hepatitis, whereas in Botkin's hepatitis iron decreased and almost disappeared at the level of the hepatic cells. The specific pathogenic action of the infectious sclerogenous virus, as well as the more intense fatty degenerescence and accumulation of iron at the level of the liver determines the evolution of the disease towards hepatic sclerosis. The sclerogenous hepatitis virus exercises an effect particularly on the Golgi canaliculi, whereas the Botkin hepatitis virus has a harmful action both on the nucleus and on the cytoplasm, especially in the chondriome.

131. V.BOERU, I.DINU, A.RADVAN. The study of amino-acids in the serum of epidemic hepatitis patients.
I.- Determination of free amino-acids. St.cerc. inframicrobiol.,microbiol.,parazitol., 1956, 7, 1-2, 93.

Free N.amine was investigated in the sera of 45 cases of epidemic hepatitis, performing parallel determinations in 11 healthy persons. In slight forms of epidemic hepatitis, N.amine is to be found within normal limits

agglutinating titer is no longer influenced by ultra-violet light. These non-specific factors likewise develop in normal liver fragments, stored for a long time in glycerin in the ice-box and give rise to errors of interpretation in the serologic diagnosis tests of epidemic hepatitis.

129. N.CAJAL, I.SAMUEL, S.DUMITRESCU, I.ADERCA. Modification of the hemagglutinating properties in lethal cases of epidemic hepatitis during the November 1954 - April 1955 period. St.cerc.inframicrobiol.,microbiol.,parazitol., 1955, 6, 3-4, 413.

Study of the hemagglutinating reaction in epidemic hepatitis, begun in 1951 by Cajal and co-workers and carried out on a great number of cases up to the second half of 1954, constantly showed in the liver fragments from lethal cases of epidemic hepatitis the presence of hemagglutinins in high titers, that ranged from 1/160 to 1/640, and seldom 1/1280 or 1/2560.

Beginning from the second half of 1954, and up to the date of the present report (May 3, 1955) ~~it~~ was observed that the liver fragments collected from lethal cases of epidemic hepatitis presented no longer hemagglutinating properties for the red blood cells of hens, man (group O), guinea pigs, horses, sheep, pigs, dogs, cats, etc.

The anatomo-pathologic study demonstrated that this modification of the hemagglutinating properties depends neither on the presence of lipids in the hepatic tissue, nor on the integrity of the hepatic parenchyma, but probably on the changes occurring in the properties of the specific infra-microbe.

ranging between 5.1 - 8.0 mg%; in mean forms, it ranges between 6.3 - 10.1 mg% and in the prolonged forms it begins to increase beyond the normal limits in all the cases, the values ranging between 8.3 - 11.1 mg%. In the severe forms of epidemic hepatitis the N.amine values range between 9.4 - 12.8 mg%. These figures are likewise to be found in severe forms of relapses. In obstructive jaundice, N.amine remains within normal limits.

132. N.CONSTANTINESCU, N.BIRZU, O.ZAVATE, B.LEIBOVICI, M. GHEORGHIU, M.GRUMAZESCU, AL.OVANESCU, I.MANTA, AL.MIHAIL. Epidemiologic investigations on epidemic hepatitis. Incidence of hepatitis in the family and homestead. St.cerc.Stiint.Medicină, Acad.R.P.R. Fil.Taş 1956, 2, 2, 135.

The epidemiologic investigations carried out in the family environment and in the homestead of 9,984 patients of epidemic hepatitis revealed the endemo-sporadic character of the disease and its lack of epidemicity. The possibility also exists of "inoculation" hepatitis, in about 82% of the patients. Only 1.5% and 3% of contacts in the families with cases of epidemic hepatitis contracted the disease, at intervals of 0 - 6 months and 0 - 3 years respectively, in spite of the fact that favourable conditions of contamination exist.

133. R.PORTOCALA. Electrophoretic investigations on the sera of patients with epidemic hepatitis. Comunicările Acad.R.P.R., 1956, 6, 5, 728.

The results obtained in electrophoresis of sera collected from 25 patients with epidemic hepatitis, with various clinical aspects and in the course of different stages of the disease are reported. The electrophoretic determinations obtained with an interferometric microelectrophoretic apparatus were interpreted after plotting of the gradient curves of Ti-

selius type.

An increase of gamma -and beta-globulins and a decrease of albumins was observed. The A/G ratio was reduced. There was no coincidence between the form of the disease and the concentration of the various protein fractions in the sera of the patients.

134. G.BALMUS, O.MITROIU, G.MARINESCU, A.VATASESCU, X.DUVAN.
Investigations of the value of the virus-bacteria agglutination test in the early diagnosis of epidemic hepatitis.

In the absence of an accurate test for the diagnosis of epidemic hepatitis, the virus-bacteria agglutination reaction, proposed for this purpose by Ghimelfarb and applied especially by some Soviet investigators, was tested. It was applied in 347 cases, of which 60 controls (normal persons or patients with non-viral affections). Results : 44.8% positive results were obtained in 184 cases with a clinical diagnosis of epidemic hepatitis, using rabbit poly-immunized serum; 19.2% positive results were obtained in another 52 tests performed with rabbit mono-immunized serum; finally, only 13.7% positive results were obtained in 51 tests, in which convalescent serum was used as immune serum. The authors believe that the discrepancy between the results published are due either to the nature of the epidemic (cases of viral hepatitis next to cases of non-viral jaundice) or to the technique used.

135. N.CAJAL, Y.COPELOVICI, G.POPESCU-DANESCU, E.LISSIEVICI, M.CEPLERANU, S.MATEESCU, R.CAPRARU. Statistico-epidemiologic data regarding epidemic hepatitis in the Bucharest region. National Congress of Medical Sciences, May 1957, Sect.Inframicrobiol., microbiol., parazitol., 6.

The statistical study carried out in the July 1953-

August 1954 period in five centers in the Brasov region, on 1,300 epidemic hepatitis patients, showed the following : morbidity rate increased in the months of August, September, October and November; mortality rate was on the decrease (0.51%); most cases occurred in men; ~~the age-group most affected~~ was between the ages of 20 and 40; there were more cases among manual workmen (33.9%), as compared to 1.90% individuals in the family environment; most cases appeared after various surgical interventions (injections, transfusions etc.) which does not justify however the assumption that all these cases were "inoculation hepatitis", since similar antecedents have been established in an even greater number of patients with infections other than hepatitis (81.37%).

136. N.CAJAL, M.LEONESCU, V.BOERU, C.BABA. The serum aldolase test in cases of epidemic hepatitis. The works of the Conference of Epidemic Hepatitis, Tg.Mures, 1957, 2, 66.

The results obtained in a study on serum aldolase values in epidemic hepatitis cases in our country, are reported. It is shown that serum aldolase activity significantly increases in the course of epidemic hepatitis, as compared to the controls, particularly during the first week of the disease, after which a decrease of the titers obtained is observed. Consequently, the serum aldolase test is recommended as being important in the diagnosis of epidemic hepatitis.

137. N.CAJAL, M.LEONESCU, V.BOERU, C.BABA, M.FRENKEL. The aldolase test in the diagnosis of epidemic hepatitis. Reports of the Soc.of Med.Sciences, Sect. Inframicrobiol.,microbiol.,parazitol., March 1957.

Of late, the conclusions having been reached by numerous investigators in different countries that the serum aldolase test can be successfully used in the laboratory

diagnosis of epidemic hepatitis, ~~a study was carried out~~ ~~on this~~ test in the cases of epidemic hepatitis occurring in our country. The first investigations carried out to this end showed that the activity of serum aldolase is greatly increased in the course of epidemic hepatitis, the highest values being encountered in the first week of the disease. Owing to the differences observed between the values determined in patients suffering from hepatitis and those suffering from other affections, the test can be considered of first importance for an early diagnosis of the disease.

138. N. CAJAL, V. TUDOR, C. BABA, S. LITMAN, V. BOERU. Dynamic study of serum aldolase activity in epidemic hepatitis patients. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 3, 335.

The activity of serum aldolase in the course of various forms and phases of epidemic hepatitis was studied and it was found that the highest values were encountered in the first week of the disease, after which a decrease occurred, reaching almost normal values in convalescents. These values increase already in the preicteric stage.

Owing to the definite differences between the values in hepatitis patients and in controls, the early stage at which positive results are obtained and the net parallelism with the clinical form, the aldolase test can be considered as an extremely sensitive test, both for the early diagnosis and the prognosis of the disease.

139. N. CAJAL, V. BOERU, C. BABA, M. LEONESCU, V. TUDOR, S. LITMAN. Data obtained with the aldolase test in the diagnosis of epidemic hepatitis. The National Congress of Medical Sciences, Bucharest, May 1957, Sect. Inframicrobiol., Microbiol., Parazitol., 267. -St. cerc. inframicrobiol., microbiol., parazitol., 1958, 2, 1, 9.

The results obtained in 300 serum aldolase tests performed according to the technique of Lehinger modified by Bruns in epidemic hepatitis patients, in patients suffering from other affections and normals are described.

As the serum aldolase test is constantly positive in the course of inframicrobial epidemic hepatitis, the activity of this enzyme being increased already in the preicteric stage and developing closely parallel to the clinical form of the disease, the authors advocate it as an extremely sensitive test for the diagnosis and prognosis of inframicrobial epidemic hepatitis.

140. N.CAJAL, C.BABA, G.POPESCU. Comparative study of the value of certain diagnosis tests in epidemic hepatitis. Report read at the Scientific Session of the Medical-Pharmaceutical Institute - Bucharest, December 1957.

A comparative study of the value of the Hăngănuțiu-Paul-Bunnell-Davidsohn agglutination test (HPBD), the tannic acid treated red blood cell agglutination test and serum aldolase test in the diagnosis of epidemic hepatitis in our country showed that neither the HPBD agglutination test, nor the tannic acid treated red blood cell agglutination test have any diagnostic value in the present-day cases of epidemic hepatitis.

In contrast, the serum aldolase test by the high values that appear already in the preicteric stage in hepatitis patients, as compared to normal persons and patients suffering from other affections, constitutes in parallel with the clinical form an extremely sensitive test both for early diagnosis and for confirmation of diagnosed viral epidemic hepatitis cases.

141. N.CONSTANTINESCU, N.BIRZU, O.ZAVATE, M.GHEORGHIU,
B.IEIBOVICI. Epidemiologic aspects of epidemic
hepatitis. National Congress of Medical Sciences,
Bucharest, May 1957. Comunicările Sect.inframicro-
biol.,microbiol.,parazitol., 1957, 7.

The morbidity of hepatitis is not manifested in the family and the home by the evolution of epidemic foci and nor is it influenced by such factors as an uncertain state of hygiene or long contact with the patient. Isolation of the latter in hospitals does not represent an effective prophylactic method since the incidence of secondary cases is equal to that in families in which the patient was cared for at home.

142. N.CONSTANTINESCU, I.MICU, G.MUNTEANU, M.GHEORGHIU,
N.BIRZU, P.BLINDU, I.VACS. Preliminary investiga-
tions on allergic intradermoreactions in epidemic
hepatitis. Comunicările Acad.R.P.R. 1957, 7, 2,
273.

Application of the Vladimirowa method in epidemic hepatitis, i.e. intradermoreaction with gastro-duodenal fluid filtrate, collected directly from the patients and heated 30 minutes at 60°C, yielded a local reaction of allergic type. This "auto-allergen" is present at the beginning of the icterus phase, then becomes attenuated and disappears during convalescence.

143. R.PORTOCALA, V.BCERU, A.RADVAN. Chromatography of amino-
acids from the sera of patients with epidemic hepa-
titis. St.cerc.inframicrobiol.,microbiol.,parazitol.,
1957, 8, 1, 29.

A comparative study on total aminoacids from the sera of patients with epidemic hepatitis and normal sera was carried out, by means of the bidimensional chromatography me-

thod.

The results obtained showed an increase of most of the aminoacids in the course of hepatitis. The following aminoacids increase in various proportions : cystine, methionine + valine, aspartic acid, glutamic acid, serine, glycocole, lysine, alanine, histidine and threonine.

As regards the aminoacids of importance for the hepatic functions, such as cystine and methionine, an increase of cystine is always observed, and in the severe cases, that of the methionine + valine group.

144. R.PORTOCALA. Electrophoretic study of the human serum in the course of epidemic hepatitis. Riv.dell'Inst. Sieroter. Italiano, 1957, 32, 1, 297.

Electrophoretic analysis of 25 sera from patients with epidemic hepatitis showed an increase in gamma -and beta- globulins to the detriment of albumins; the A/G ratio was decreased.

No parallelism can be established between the clinical form of the disease and the percentages of the protein fractions revealed in the sera of the patients.

145. R.PORTOCALA, V.BOERU, L.MESROBEANU, N.MITRICA, I.DINU, A.RADVAN, N.CAJAL. Study of certain biochemical changes in the sera of patients with epidemic hepatitis. Lucrările Conferinței de Hepatită Epidemică, Tg.Mureș, 1957, 95. - St.cerc.inframicrobiol.,microbiol.,parazitol., 1958, 9, 1, 15.

The researches carried out on the sera of patients with epidemic hepatitis during the 1951-1956 period yielded the following results : The total serum nucleic acids showed an increase ranging between 1.02 - 2.50 g % in the slight forms of the disease, 1.23 - 5.50 g % in medium forms and

2.28 - 6.25 g% in the severe forms; normal values ranged between 0.77 - 1.97 g %.

Free N aminoacid was to be found in values ranging between 5.1 - 8 mg% in the slight forms, 6.3 - 10.1 mg% in the medium forms and 9.1 - 12.8 mg% in the severe forms; normal sera contained 4.8 - 8 mg%.

Bidimensional chromatography of total aminoacids showed an increase of all the acids except phenyl-alanine. The highest increases were observed in aspartic acid, cystine, glutamic acid, serine, glycocole, lysine, alanine, tyrosine, the methionine-valine and leucine-isoleucine groups. Cystine and methionine-valine increased in all the cases, particularly in the severe cases.

A coincidence is observed between the severity of the disease and increase of serum total nucleic acids, free aminoacids and total aminoacids.

Electrophoresis of sera from patients with epidemic hepatitis showed a massive increase of gamma-globulins accompanied in certain cases by an increase of beta-globulins and decrease of the A/G ratio.

146. I. ADERCA, M. IANCONESCU. Attempts at isolating and cultivating epidemic hepatitis viruses in tissue cultures. St. cerc. inframicrobiol., microbiol., parazitol., 1958, 9, 2, 233.

A description is given of the attempts made at cultivating a strain of the Botkin epidemic hepatitis virus on chick embryo tissular cultures according to the Maitland method. Negative results were obtained in the trials to reveal the virus by means of the hemagglutination reaction. Negative results were also constantly obtained when the authors tried to isolate a strain of the sclerogenous hepatitis virus in chick embryo tissue cultures.

The attempts made at isolating a hepatitis strain in HeLa tumora cell cultures yielded negative results as

regards the cytopathogenic effect on the cells. In the light of similar results published in literature, the authors discuss the possibility of a particular biology of hepatitis viruses, as well as their accentuated natural variability, as determinative factors in the failure of investigations up to date.

147. M. ANDREESCU, C. BABA. Method for preparing fructose-barium diphosphate necessary for serum aldolase determinations. Report read at the Session of the Institute of Inframicrobiology of the R.P.R. Academy, September 8, 1958.

In contrast to other known methods, preparation of fructose-diphosphate is proposed by direct esterification of fructose with alkaline phosphates, under the catalytic action of phosphorilase.

This procedure insures an output of 33% calculated in terms of fructose - pure barium diphosphate; with cane sugar only 10.8% is obtained. The active value of the preparation is accurately determined by the comparative method proposed by the authors using as standard unit a "standard" fructose diphosphate and as specific test the aldolase catalysis and 2-4 dinitrophenil-hydrasin staining reactions.

The indirect method for determining fructose 1,6-phosphate cannot be applied to the biologic product because of its content in primary esters that are to be found next to fructose - barium diphosphate.

148. G. BALMUS, O. MITROIU, S. LITMAN, M. COFFLER, A. VATASESCU. Investigations of the hemagglutination reaction with M. Rhesus erythrocytes in the diagnosis of epidemic hepatitis. St. cerc. inframicrobiol., microbiol. parazitol., 1958, 9, 3, 343.

The following results were obtained by application

of the Hoyt and Morrison technique to the hemagglutination test with *Macacus Rhesus* erythrocytes :

a) The reaction was positive in 41.4% of the cases of epidemic hepatitis (181 cases);

b) In controls (109 cases) there were 14% positive results;

c) Finally, in obstructive jaundice, hepatic or other affections (52 cases), positive reactions were obtained only in 13.4% of the cases.

Although the hemagglutination test with *Macacus Rhesus* erythrocytes does not present a specific character in epidemic hepatitis, it helps, practically, to distinguish between viral hepatitis and other non-viral or obstructive jaundice.

149. N.CAJAL, M.CEPLEANU, Y.COPELOVICI. Attempts at isolating the hepatitis virus on laboratory animals and embryonated eggs. Report read at the session of the Inst. of Inframicrobiology of the RPR Academy, May 27, 1958.

Negative results were constantly obtained in the trials made to isolate and culture ~~hepatitis~~ viruses from numerous and various pathogenic products (whole blood, blood serum, feces, duodenal juice) from 39 patients in the incipient stage of the disease, and from emulsions of organs (liver, spleen) from 21 lethal cases occurring during the 1954-1957 epidemic. The infectious material was inoculated by various routes (cerebral, peritoneal, intrahepatic, intranasal) to diverse species, totalling 456 laboratory animals (rabbits, guinea pigs, adult rats and chickens) and 591 embryonated eggs, with or without adjuvant methods (cortisone acetate, antityphus vaccine, ultraviolet light, etc.)

These negative experiments show that the virus which gave rise to the 1954-57 epidemic in the R.P.R. differs from Botkin's virus and that of sclerogenous hepatitis, as well as from those described by various authors in other countries, viruses which it was possible in certain cases to transmit to laboratory animals.

150. N.CAJAL, G.DANIELESCU, M.ANDREESCU. Investigations on the anaphylactic reaction with hepatitis allergens in the guinea pig. Application of the Zilber technique for the detection of hepatitis antigens. Rev.Sci.Med., 1958, 3, 19.

The anaphylactic reaction, applied according to the technique of L.A.Zilber for the detection of specific tumoral antigens, is positive in the guinea pig when hepatitis pathologic products are used for sensitization and shock induction and, when identically prepared normal products are used for desensitization. The anaphylactic reaction was negative in guinea pigs sensitized with pathologic products, prepared from the normal or cirrhotic liver.

This reaction, owing to the possibility of detecting the characteristic virus, will perhaps be employed in the future in the diagnosis of hepatitis.

151. N.CAJAL, C.BABA, V.TUDOR, S.LITMAN. The detection of the clinical inapparent form of epidemic hepatitis by means of the serum aldolase test. Comunicările Acad. R.P.R. 1958, 8, 9, 967.

The study carried out in two closed collectivities with a total of 183 persons in which a number of 320 serum aldolase tests were performed, led to the following conclusions: the serum aldolase test is the laboratory reaction which allows for an early diagnosis of epidemic hepatitis; moreover, by means of this test, even the subclinical or clinically inapparent form of epidemic hepatitis can be detected.

Based on these data, it may be assumed that high titers of serum aldolase might coincide with the state of virus carrier.

152. M.COFFLER, A.VATASESCU, G.BALMUS, O.MITROIU, S.LITMAN.

The value of the hemagglutination test with M.Rhesus erythrocytes for detecting epidemic hepatitis virus carriers. St.cerc.inframicrobiol.,microbiol.,parazitol., 1958, 9, 4, 447.
"Acta Virologica" 1959, 3, 2, 113.

A number of 666 hemagglutination tests with M. Rhesus erythrocytes were carried out in four groups of persons :

- a) 300 blood donors, considered as normal (14% positive reactions);
- b) 212 clinical cases of epidemic hepatitis (41% positive reactions);
- c) 89 contacts (25.8% positive hemagglutinations);
- d) 65 patients with various affections (13.8% positive results).

It is shown that the 14% positive reactions obtained in blood donors tallies almost completely with that reported by other authors in the statistical control of post-transfusion hepatitis patients; it is therefore advisable, as a prophylactic measure, to eliminate the blood donors, whose hemagglutination reaction with M.Rhesus erythrocytes is positive.

153. N.CONSTANTINESCU, O.ZAVATE, N.BIRZU, M.GRUMAZESCU, B.LEIBOVICI. Epidemiologic investigations in hepatitis. State of immunity in inframicrobial infectious hepatitis appraised according to epidemiologic criteria. St.cerc.St.Medicină, Acad. R.P.R. Fil.Iași 1958, 9, 2, 317.

The conclusion was reached that in inframicrobial infectious hepatitis there does not exist a state of immunity in the population, comparable to that observed in measles and poliomyelitis. In opposition to the age group over 15,

in which morbidity from inframicrobial infectious hepatitis stayed at a high level, with an ascending straight line curve, in children seasonal epidemic peaks were recorded. The age group over 15 gave only 3% cases of measles and 9% cases of poliomyelitis, whereas in inframicrobial infectious hepatitis the proportion was 76% of the patients.

154. M.LEONESCU, N.CAJAL, V.BOERU, C.BABA, M.FRENKEL.
Diagnosis value of serum aldolase in epidemic hepatitis in children. *Pediatrics* 1958, 1, 13.

The present paper deals with data on the serum aldolase test performed in children, suffering from epidemic hepatitis, and in contacts. The conclusion is drawn that assessment of the value of serum aldolase must be done only after previous determination in a sufficient number of healthy controls or subjects suffering from other affections. The value of the test is highest in the first 7 days, and although it is not specific, it is more constant in the diagnosis of epidemic hepatitis than the disproteinemia test so currently used. The serum aldolase test is of diagnostic value in anicteric epidemic hepatitis and in the subclinical forms of the infection in contacts, thus proving its prophylactico-epidemic value.

155. G.MARINESCU, A.ISBASESCU, A.GARIBALDI, V.DRAGATOIU.
Vitamin B content and suprarenal lesions in the severe forms of icterogenous hepatitis. *Bull.de l'Acad.Med.* 1958, 142, 1-2, 16.

The anatomo-pathologic study of the suprarenals from patients with epidemic hepatitis (30 cases studied macroscopically, 100 cases studied under the microscope), showed the presence of degenerative, vasculo-circulatory lesions and sometimes even infiltrative lesions.

Detection of vitamin C on suprarenal sections, by the Giroud and Leblanc method and determination of this vitamin in the whole organ, according to the Tillmans, Fugita and Ebihara method, in 11 cases of hepatitis, showed a considerable decrease of ascorbic acid.

In view of the possible appearance of suprarenal insufficiency in the course of epidemic hepatitis, hormone-therapy and hepatic medication in general should be accompanied by administration of vitamin C in sufficient or even massive doses.

156. V.TUDOR, S.LITMAN, V.BOERU, C.BABA, N.CAJAL. The epidemiologic value of the serum aldolase test in epidemic hepatitis. "Viața Medicală", 1958, 9, 789.

Performing the aldolase test in contacts with cases of epidemic hepatitis in two closed-in collectivities, made it possible to detect the anicteric, ambulatory and inapparent cases. These results demonstrate the great epidemiologic value of the aldolase test, which makes it possible to neutralize the source of infection and thus to wipe out the epidemic focus.

A wider use of the serum aldolase test is suggested in the prophylaxis of epidemic hepatitis and its sequella.

157. P.ATHANASIU, V.BOERU, I.DINU. Iron content in the blood in epidemic hepatitis. St.cerc.inframicrobiol., 1959, 10, 4, 497.

The iron content in the sera of 130 patients with epidemic hepatitis and 15 patients with cirrhosis was investigated. In hepatitis, the percentage of serum iron increased to values ranging from 140% - 535%, and in cirrhosis it increased in 3 cases to values ranging from 142% - 164% and decreased in 12 cases to values ranging from 78% - 14%.

The morpho-pathologic and histo-chemical aspects observed at the level of the liver, and particularly the decrease or absence of iron at this level in Botkin's hepatitis accounts for the increased content of iron in the blood in this type of hepatitis.

158. N.CONSTANTINESCU, N.BIRZU, O.ZAVATE, B.LEIBOVICI, M.GRUMAZESCU, I.MANTA. Epidemiologic aspects of inframicrobial infectious hepatitis. State of immunity assessed according to epidemiologic criteria. Le J.Med. Lyon 1959, 4372.

This synthesis relates the results of epidemiologic observations, recorded up to 1959. Comparison of the aspect of morbidity of other epidemic diseases, of the intestinal or respiratory type, with that of the evolution of hepatitis, does not plead in favour of the existence of a state of immunity in the population.

159. ACAD.ST.S.NICOLAU, S.BIBERT-MOROIANU, N.CAJAL. Some statistico-epidemiologic data on the evolution of inframicrobial epidemic hepatitis in Romania. St.cerc. Inframicrobiol., 1959, 12, 4, 401.

After reviewing the publications that have appeared since 1954 on the evolution of epidemic hepatitides (E.H.) and stressing the most important elements obtained in this study, several statistical data are given and their interpretation regarding the evolution of this viral disease during the 1952-1958 period. These data are based on the figures published by the General Sanitary and Antiepidemic Department of the Ministry of Health and Public Welfare. Cases were rigorously recorded since 1952, when epidemic hepatitis was declared a notifiable disease.

Analyses of these data show that E.H. has a tendency to spreading, in Rumania, during the 1952-1958 period.

The incidence curve gradually ascends in a slow but sustained rhythm, in spite of the sanitary measures taken.

At the beginning of the period studied, the disease developed especially in towns, however, during the last years a marked spread has been observed in rural environment and particularly in the large villages with an urban character.

The highest prevalence was reported in the centers with an extremely dense population, where close contact between individuals exists and the traffic is more intense.

The peak of incidence is to be found during the months of November and December. This represents a type of seasonal incidence that differs from the incidence of other contagious diseases occurring in the Rumanian People's Republic. The differences between maximum and minimum incidence are very small in this disease. The seasonal incidence denotes the existence of a high state of endemicity with low epidemic peaks.

In the Rumanian People's Republic, epidemic hepatitis affects especially adults, a particularity seldom observed with other contagious diseases in the epidemiologic specific of the country. During the last years however, a tendency to increase has been observed in the number of epidemic hepatitis cases among children aged 7 to 14, appearing prevalently during the last 3 months of the year, that is during the first school term. The incidence rate decreases during the vacations.

The problem that arises is that of the part played by the kind of life and the diet, which would account for the differences between the incidence among adults and children.

Finally, the authors discuss the role which parenteral transmission might have in the propagation of the disease. They believe that in the Rumanian People's Republic this route of transmission cannot fully explain the spread of the disease, which is due to the intervention of certain

factors which have not as yet been sufficiently identified and which are to be found here as well as in other countries.

160. ACAD. ~~ST. S. NICOLAU~~ ~~N. CAJAL~~ ~~N. CAJAL~~. Variability in nature of the epidemic hepatitis virus.

Report read at the Second International Congress of Infectious Pathology, Milano, May 6-10, 1959.

The conclusions drawn following investigations and observations in the vast problem of epidemic hepatitis, made it possible to assert the variability of the virus in natural conditions. The state of more or less accentuated acquired resistance in the population determines to a certain extent the phenomenon of transformation of the virus.

It is likewise possible that excessive therapy with antibiotics contributed to the spontaneous modification of the hepatitis virus (by excluding certain synergic or antagonistic microbes), as well as the massive introduction of methionin in the current therapy of this viral disease.

In the case of the variability of the hepatitis virus, variability observed in Rumania, all these elements have modified the exterior medium of the virus, i.e. the human organism, in which the germ is obliged to develop; the new metabolic conditions giving rise to a more or less fundamental transformation of the inframicrobe which, transmitted by heredity, brings about the appearance of new types.

Thus, it is possible that the sclerogenous virus should have appeared following natural modification of the Botkin virus and that the non-hemagglutinating virus should be a result of the transformation of the sclerogenous virus.

The fact that the plurality of epidemic hepatitis viruses, resulting from the processes of spontaneous variability taking place in nature, has been established, will make it possible to attack this problem more successfully. Moreover, it accounts for the disconcerting differences in the results obtained by various authors, and even in those

obtained by a single author working on this intricate problem of viral epidemic hepatitis.

161. O.MITROIU, M. POPA, W.NEGREANU, M.BILCU, M.POPPER, S.

KAUFMAN, V.NICULESCU, Z.VANCOV. The differential diagnosis of jaundices occurring in the course of para-aminosalicylic acid (PAS) treatment, by means of serum aldolase determinations. St.cerc. inframicrobiol. 1960, 11, 1, 125; Acta Virol.Ung. 1960, 7, 2, 186 and L'inform.Méd.Roum. 1960, 3, 11.

An attempts is made to solve the question of the differential diagnosis of jaundices appearing in the course of antituberculosis chemotherapy with PAS, by means of serum aldolase determinations.

Investigations were carried out in a group of tuberculous patients with jaundice and 3 control groups for the PAS treatment. Since during PAS treatment, serum aldolase values were normal, even in the cases in which the patients tolerated the treatment badly, it was possible to use the test for the differential diagnosis of jaundices.

Of 76 icteric patients, 57 presented higher serum aldolase values, coinciding with the clinical diagnosis of epidemic hepatitis, and 13 presented normal or slightly increased values, coinciding with a clinical diagnosis of obstructive jaundice.

Thus, it was found that the administration of PAS may cause obstructive jaundice. The high incidence of epidemic hepatitis may be attributed both to the epidemicity of the disease and to the fact that the disturbances produced by PAS create conditions favourable to the development of the virus.

162. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU. O.ZAVATE, N.BIRZU, S.BIBERI-MOROIANU, C.OANA, M.GRUMAZESCU. The phenomenon of "age-groups" in the evolution of infectious inframicrobial hepatitis. St.cerc. inframicrobiol., 1960, 11, 3, 339.

The evolution of morbidity from infectious viral hepatitis - studied in a population of about 2 million inhabitants, in two regions of Moldavia, over a 7 years period (1953-1959) - is characterized by a "phenomenon of age groups".

Morbidity is higher in urban than in rural environment.

In the age-groups over 15 years, the morbidity curve both in urban and rural environment runs almost straight all the year. In contrast, in the 0-14 years age-group, a periodical ascension in the autumn-winter months is noted in towns, giving to the disease a seasonal character. In rural environment, this seasonal character only appeared in 1958.

At preschool (0-6 years) and school-age (7-14 years) the morbidity curves run parallel with simultaneous seasonal peaks.

A closer knowledge of the "age-group phenomenon" represents one of the working premises in the control of morbidity organized during the last years in the country.

163. N.CONSTANTINESCU, O.ZAVATE, N.BIRZU, C.BERCOVICI, C.OANA, S.FREUND. Comparative morbidity of viral infectious hepatitis (V.I.H.) and epidemic diseases transmitted by digestive route. St.cerc.inframicrobiol., 1960, 11, 3, 347.

The epidemiologic investigations carried out in the population of two towns, in children or adult communities, as well as in various families, contaminated by V.I.H., the endemo-sporadic evolution of this disease was not modified by the intervention of dysentery or estival enteritis epidemics.

In the rural population, poliomyelitis broke out almost explosively in some villages, and typhoid fever was both sporadic and definitely epidemic, whereas V.I.H. continued to be endemo-sporadic.

Massive mobilization of the intestinal germs during the evolution of these epidemics did not favour eventual mobilization of the V.I.H. virus. Consequently, no raise in the morbidity rate from V.I.H. in the urban or rural population, nor development of epidemic foci in the V.I.H. contaminated families and communities was observed.

164. LIU CHUNG PAI. Comparative and dynamic investigations on transaminase, serum aldolase and methylen blue test values in the diagnosis of human epidemic hepatitis. St.cerc.inframicrobiol., 1960, 11, 3,437.

The dynamic, comparative values of serum GOT transaminase, serum aldolase and methylen blue test were investigated in 150 cases of human epidemic hepatitis and 17 cases experimental canine hepatitis. The following results were obtained :

Serum aldolase and GOT transaminase are present much higher values in the acute stage of human epidemic hepatitis. The dynamic curves of these two enzymes run parallel, but the degree of positivity does not always agree. As a rule, transaminase values coincide with the clinical evolution of the disease and may be used as an indication of the prognosis. Aldolase values do not reflect the severity of the disease, but the duration with time of this test is closely linked to the prognosis. Although the proportion of positive transaminase tests is higher (93%) than that of aldolase tests (70%), the specificity of transaminase is lower than that of aldolase.

In canine hepatitis, the increase in serum transaminase is inconstant and moderate. Aldolase values do not increase, increase only slightly or even have a tendency to

fall during the evolution of the disease.

The methylen blue test is fairly sensitive (84%) for the diagnosis of epidemic hepatitis, but not sufficiently specific.

165. N.CAJAL, C.BABA, V.BOERU, O.MITROIU. The diagnosis of viral epidemic hepatitis by serum aldolase activity determinations. Zdravohroneanie, Chisinau 1960, 2, 19 and Giorn.Malatt.Infett.Parassit. 1960, 12, 9-10, 482.

The results obtained in 2,056 serum aldolase determinations in 652 viral epidemic hepatitis patients, 1,027 healthy individuals and 125 patients suffering from other affections, led to the following conclusions :

Serum aldolase activity is much more accentuated in the course of epidemic hepatitis, as compared to the controls. The differences become more evident when studied dynamically, according to the stages of the disease. The highest values are to be found in the incubation period and the first week of the disease, after which they begin to decrease, attaining almost normal values during convalescence.

The serum aldolase test, although non-specific, is of great diagnostic value, due to the high proportion of positive results and to the early date at which it becomes positive.

In view of the net parallelism between the clinical form and aldolase activity, the test has a true prognostic value and even an epidemiologic one, since the subclinical and clinically inapparent forms of epidemic hepatitis can be detected by this test.

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G. BALUS, O. MITROIU, S. LILIAN, M. COFFLER, A. VATASESCU. Investigations on the value of the hemagglutination test with M. Rhesus erythrocytes for the diagnosis of epidemic hepatitis and virus carriers. Giorn. Malatt. Infett. Parassit. 1960, 12, 9-10, 476.

Hemagglutination with M. Rhesus erythrocytes, recently proposed by Morrisson and Hoyt for the diagnosis of epidemic hepatitis, was studied in 666 patients divided into 4 groups as follows :

- a) 300 blood donors, considered normal subjects, who yielded a proportion of 16% positive reactions;
- b) 212 epidemic hepatitis patients with 41% positive reactions;
- c) 89 contacts with 25.8% positive hemagglutination;
- d) finally, 65 patients suffering from various affections, with 13.8% positive reactions.

The small number of positive reactions obtained in the group of viral hepatitis in comparison with that obtained by the authors who proposed the method, may be accounted for by the fact that in our country the hepatitis virus has suffered a transformation with time, becoming non-hemagglutinating, as a consequence of the struggle of the virus against new environmental conditions : more or less immunized organisms.

Even if the test is not specific, it gives a useful orientation, by differentiating between viral and non-viral or obstructive jaundice.

167. O. MITROIU, F. PREDOVICIU, M. POPA. The value of the serum aldolase in the diagnosis of epidemic hepatitis. Microbiol., parazitol., epidemiol. 1960, 2, 149.

The diagnostic value of the serum aldolase test was investigated under classical conditions. 1451 aldolasemia determinations were done in two groups of patients and four control groups.

The data obtained showed that aldolasemia values above 40 u. confirmed the diagnosis of epidemic hepatitis in 98% of the cases and values below 20 u. invalidate the diagnosis in the same proportion. Intermediary values, from 20 to 40 u, are not sufficient indications for a diagnosis of epidemic hepatitis, since these values are also to be found in other affections.

168. P.ATHANASIU, I.POPESCU-PRETOR, V.COMPANET, C.PALADE, M.ANDREESCU, D.CONSTANDACHE. An epidemic of viral hepatitis in children. Epidemiologic, clinical and laboratory study. Report read at the festive Session of the Institute of Inframicrobiology, December 21-22, 1960.

In July-August 1960, a focal epidemic of viral hepatitis broke out in a village, affecting especially the infantile population. The epidemiologic findings show that the infection exclusively occurred by digestive route.

The epidemic was characterized by a mild evolution and prevalence of anicteric cases, in the second half of August, after which it died out.

169. N.CAJAL, C.BABA, V.TUDOR, S.LITMAN, V.BOERU. Contributions to the diagnosis of clinically inapparent forms of epidemic hepatitis. Zeitschr.f.d.ges.Hyg. u.ihre Grenzgeb. 1960, 6, 106.

Systematic investigations, carried out in two communities totalling 184 persons, in which 12 icteric hepatitis cases appeared, made it possible to determine the diagnostic possibilities and demonstrate the presence of clinically inapparent forms of epidemic hepatitis.

Aldolase determinations in the sera collected in an interval of 4 to 7 days from 172 contacts showed the presence of 15 individuals with a higher activity of this enzyme.

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In 2 of these cases, the clinical symptoms of the disease appeared after 3 to 10 days and in 31 other of these cases, detailed clinical and laboratory examinations showed discrete symptoms of anicteric hepatitis; the other 10 cases were normal, but the serum aldolase curve was similar to that of icteric patients.

In order to confirm the identification of aldolase positive patients with clinically inapparent cases of epidemic hepatitis, in one community, only the clinical apparent cases were isolated, and in the second community, both the clinically apparent and aldolase positive cases were isolated; in the first community net cases of epidemic hepatitis continued to appear, whereas in the second community the epidemic focus died out.

Consequently, the serum aldolase test is demonstrated to be a sensitive and early diagnostic test, both in the clinical apparent and inapparent forms of epidemic hepatitis, especially for epidemiologic purposes.

170. C.SURDAN, G.POPESCU-DANESCU, G.SORODOC, C.BABA. Experimental investigations on the relationship between human epidemic hepatitis virus and canine contagious hepatitis virus.(Rubarth). St.cerc.inframicrobiol.1961, 12, 1, 39.

Transmission of epidemic hepatitis was not obtained by intravenous and intraperitoneal inoculation of the blood serum and feces suspensions of hepatitis patients to 25-35 days old puppies.

The experimentally infected puppies, sacrificed between the 11th and 40th day after inoculation, did not present any hepatic morphologic alterations that might reflect the presence or multiplication of human epidemic hepatitis virus.

The serum aldolase test in the puppies inoculated with virulent human epidemic hepatitis material showed no

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variations that might indicate the presence of certain hepatic functional disturbances.

Inoculation of the virulent human hepatitis material does not modify the sensitivity of the dogs to subsequent infection with canine contagious hepatitis virus (Rubarth).

The sera of hepatitis patients show an increased hemagglutinating-inhibiting activity to the Rubarth virus, comparable to that of the sera of dogs suffering from canine contagious hepatitis.

171. P.ATHANASIU, M.ANDREESCU, M.IALOMITEANU. The study of serotonin in epidemic hepatitis. St.cerc.inframicrobiol., 1961, 12, 1, 129.

In the course of epidemic hepatitis, the amount of serotonin, evaluated by 5-HIA acid values, was found to increase. Increase of urinary 5-HIA acid values was more accentuated in the first week of the disease and progressively decreased, running parallel to the evolution of the disease towards recovery.

The results point to the necessity of performing two consecutive urinary 5-HIA acid determinations, at a week's interval. The curve of 5-HIA acid elimination in the urine follows fairly closely the evolution of the disease.

172. ACAD.ST.S.NICOLAU. Inframicrobial epidemic hepatitis. The virus of the disease. St.cerc.inframicrobiol., 1961, 12, 2, 185.

The investigations carried out with a view to isolating and studying the etiologic agent of epidemic hepatitis are reviewed.

Investigations carried out in man have shown that the causal agent is to be found in the organs, the duodenal juice, the feces in certain stages of the disease.

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At the beginning, experimental results showed the possibility of reproducing the disease in mice, rats, guinea pigs, young rabbits. Subsequent investigations were negative. The virus had changed its properties in the course of the years.

The author likewise reviews investigations with the embryonated egg and serologic studies, the contradictory results of which obtained by various authors may be explained by the fact that they worked with different viruses. There was one virus in the epidemic hepatitis of 1940-1941, there is another virus in the epidemic hepatitis of to-day. The importance of further investigations on the etiologic agent of the disease is pointed out, in view of the transformation of the virus into a vaccine.

173. ACAD.ST.S.NICOLAU, O.ZAVATE, N.CONSTANTINESCU, I.MICU, N.BIRZU, F.RUSU, AL.CVANESCU. Investigations on viral infectious hepatitis (V.I.H.) transmitted by parenteral route. St.cerc.inframicrobiol. 1961, 12, 4, 421.

The investigations carried out on 800 V.I.H. patients and, comparatively, on 708 controls, point to the important role of hospitalization in the transmission of hepatitis by parenteral route : 43.7 per cent hospitalizations for various other affections in the antecedents of the V.I.H. patients, as compared to 7 per cent in the antecedents of the controls. Injections done outside the hospital gave comparable values : 27 per cent for V.I.H. patients and 20 per cent for the controls.

Examination of the records of 308 former V.I.H. patients showed that 69.2 per cent had inoculations in their antecedents, a proportion attaining in some localities 79.3 per cent (52.8 per cent hospitalizations and 26.5 per cent various injections.)

Analysis of 2,089 case files of V.I.H. patients showed that in children, the lowest proportion of hospitalizations in the antecedents was recorded during the seasonal autumn-winter peak, corresponding to the maximum incidence of Botkin's hepatitis transmitted by natural routes. Maximum hospitalizations in the children's antecedents were recorded in the spring-summer months, when the V.I.H. morbidity rate is sporadic. In adults, on the contrary, the proportion of hospitalizations in the antecedents is almost level throughout the year and fully corresponds to the almost rectilinear curve of V.I.H. morbidity in adult patients. Therefore, in this age-group, the prevalence of hepatitis with a presumption of inoculation, is implied.

The above findings show that, without underrating the natural routes of propagation of V.I.H., one of the important modes of virus transmission is the parenteral route, therefore requiring adequate prophylactic measures.

174. ACAD.ST.S.NICOLAU. Viral epidemic hepatitis. Microbiol., epidemiol., parazitol., 1960, 2, 109; Zschr.f.die ges.Hyg.u.ihre Grenzgeb.1960, 6, 39 and Arch.des Mal.de l'App.Digestif.,1961, 52, 1, 39.

The contradictory data concerning viral epidemic hepatitis are presented; these contradictions do not show that the investigators were mistaken in their experiments and observations, but confirm the variability of the hepatitis virus in nature.

The successive variations of the virus have given rise in the last quarter of century to several types of germs, and as an obvious result - observed by clinicians - to the plurality of the forms of epidemic hepatitis.

The differences between the three types of hepatitis virus (type A - Botkin's hepatitis; type C - sclerogenous hepatitis; type D - non-hemagglutinating virus hepatitis) made evident and studied by the Rumanian School of Inframicrobiology,

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concern the form of the disease, the morbidity and mortality rates, seasonal incidence, epidemiology, histopathology, immunology, experimentation (cultivation of the germ in embryonated eggs, passages in experimental animals, hemagglutination and hemagglutination-inhibition) etc.

A fourth type is that of inoculation hepatitis (type B), whose relationship with the other three types must still be determined.

The successive variations of the hepatitis virus in nature explain the discrepancies in specialty literature, discrepancies which exist only when one compares the results of the experiments and observations made at different periods concerning different virus types and forms of the disease.

175. ACAD. ST. S. NICOLAU, S. BIBERI-MOROIANU, N. CAJAL. Epidemiologic considerations on the evolution of infra-microbial epidemic hepatitis in the Rumanian People's Republic during the 1952-1960 period. Viata medicală, 1961, 18, 963.

The dominant and particular characters of the epidemiology of epidemic hepatitis in Rumania, from 1952 to 1960, are described.

Particular attention is paid to the rhythm and intensity of the evolution of hepatitis cases in the course of the years studied, emitting the hypothesis of the existence of a state of premonition in this viral disease; the different evolution of the disease in urban and rural environment is shown, stress being laid on the 11% increase of the incidence rate in children, in urban environment and 73% in rural environment. The seasonal incidence of the disease is discussed.

It is pointed out that epidemic hepatitis in children obeys the general epidemiologic laws of the evolution of contagious diseases more faithfully than the infection in adults, which presents particular aspects.

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Further epidemiologic studies are necessary in order to establish scientifically the general and essential points of the laws governing the epidemic process of viral hepatitis.

176. I.ADERCA, N.CAJAL, M.IANCONESCU, G.POPESCU, G.DANIELESCU.

Investigations on the Czechoslovakian strain of the hepatitis virus; ("Motol" strain). Report read at the Interregional Conference on epidemic hepatitis. Sinaia, October 21-22, 1960.

A study was carried out on the Motol strain, the assumed agent of epidemic hepatitis, isolated by V.Kubelka in Czechoslovakia, from the viewpoint of its cultivation in various cell cultures, laboratory animals and embryonated eggs.

The authors describe the characters of the morphologic alterations in human embryo cell cultures obtained by trypsinization and in the organs of inoculated animals.

177. ACAD.ST.S.NICOLAU, N.CAJAL. The results of the investigations of the Institute of Inframicrobiology in inframicrobial epidemic hepatitis. Stud.cerc. inframicrobiol. 1961, 12, suppl., 31.

The results obtained by the investigators of the Institute of Inframicrobiology in the field of viral epidemic hepatitis, during the 1949-1961 period are described.

178. O.ZAVATE, N.CONSTANTINESCU, N.BIRZU, C.OANA, GH.PANAITESCU, AL.MIHAIL. Infectious virus hepatitis (I.V.H.) within the family environment. Stud. cerc. inframicrobiol., 1961, 12, suppl., 285.

The familial incidence of I.V.H. was investigated over a period of six years (1953-1958) in three towns of about 250,000 inhabitants each, situated in different geographical areas of the R.P.R.

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Out of 5,468 families in which I.V.H. occurred, the disease was confirmed to a single subject in 95 per cent of the cases. In 1.8 per cent of the families, the secondary cases occurred at intervals of 0-60 days following the first case while in 3.2 per cent of the families several cases occurred at long intervals ranging from two months to five years.

In 151 families in which secondary cases appeared within 0-60 days, 74 per cent of these cases involved children, the possible intra-familial source of infection being an initial case concerning another child. In contradistinction of the group of families in which hepatitis exclusively occurred among children, in the group in which the disease involved adult subjects, the incidence rate of families exhibiting secondary cases within 0-60 days was much lower, i.e. of 18.6, 10.9 and 16.9 per cent respectively.

The incidence rate of secondary cases among children is of 4.8 per cent, as compared to 0.6 per cent in adults. The incidence rate of secondary cases within the family is higher during the cold season of the year, corresponding to the autumn-summer peaks of I.V.H.

A series of general prophylactic measures mainly concerning the 0-14 year age-group, as well as the prophylactic use of gammaglobulins are required.

179. P.ATHANASIU, N.CAJAL, M.IALOMITEANU, M.ANDREESCU, O. SFERDIAN. Comparative investigations on liver and muscle aldolase in epidemic hepatitis sera. Stud.cerc. inframicrobiol., 1961, 12, supl., 295 and Rev.Sci.Méd., 1961, 7, 304.

Determinations of fructose-1-monophosphate aldolase and fructose-1,6-diphosphate aldolase in the sera of 100 patients suffering from virus hepatitis revealed the presence of

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increased values up to 10-40 u and 20-80 u respectively, as compared to 0-8 u and 10-20 u respectively in normal subjects or in those suffering from other liver diseases.

Since fructose-1-monophosphate aldolase is exclusively formed in the liver, simultaneous performing of both tests makes it possible to distinguish this enzyme from muscle aldolase. Estimation of the two results may yield more complete information concerning the diagnosis of virus hepatitis.

180. N.CAJAL, O.MITROIU, C.BARBU, O.CONSTANDACHE, M.POPA.

Comparative study of hemagglutination reactions with the red cells of M.Rhesus and of one-day-old chickens in epidemic hepatitis. Stud.cerc.infra-microbiol., 1961, 12, suppl., 301.

The results are reported of a comparative study of hemagglutination reactions performed with the sera of patients suffering from epidemic hepatitis or other viral diseases and the red cells of one-day-old chickens and of M. Rhesus.

The figures recorded by the present authors in cases of epidemic hepatitis are lower than those reported by other investigators. Although these figures are definitely increased as compared to those recorded in normal subjects, they cannot be used for diagnostic purposes since similar increases occur in other diseases as well. Hence, these tests are of little avail for the diagnosis of epidemic hepatitis as prevailing at present in the Rumanian People's Republic.

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181. ACAD.ST.S.NICOLAU, A.STROE, GH.MARINESCU, P.STERESCU, GR.LAZARESCU. Herpes and poliomyelitis. Anti-herpes paraimmunity induced in man by poliomyelitis. The possibility of paraspecific prophylaxis in poliomyelitis by means of experimental herpetization. St.cerc.inframicrobiol., 1950, 1, 1, 121.

After a review of various cases of paraimmunity reported in viral diseases, the facts that point out the existence of para-immunity between herpes and poliomyelitis are discussed. An experimental study was carried out, by inoculations of the herpes virus on the skin of paralytic poliomyelitis patients and former patients, in order to investigate if an increased paraimmune resistance to herpes is built up. Inoculations performed on 55 subjects showed that starting from the second month after the onset of poliomyelitis an increased resistance to the herpes virus exists, the number of positive inoculations decreasing from 72.7 % to 26.1 % in the second month and 4% between the 3rd month and the 7th year after the poliomyelitic infection. The authors propose to investigate if herpes is followed by an increase of resistance to poliomyelitis and if herpetization could constitute a method for combating poliomyelitis.

182. ACAD.ST.S.NICOLAU, T.HORNETZ, R.DINU, S.MATEESCU, M.SEPANU-FIRICA. A histopathologic study of acute anterior poliomyelitis; changes in the peripheral and central sensitive systems. St.cerc.inframicrobiol. microbiol., parazitol., 1951, 2, 1-4, 131.

Diffuse changes of the glial reaction type, with neuronophagia, inflammatory infiltration or necrosis, were observed in the spinal ganglia, in the posterior horns of the spinal cord, in the Goll and Burdach nuclei, in the nucleus

arcuatus, in the locus coeruleus, in the roof nuclei and cortex of the cerebellum, in the thalamus and in certain zones of the cerebral cortex.

183. N.CAJAL, EL.LISSIEVICI-OPRESCU. Investigations on sero-neutralizing poliomyelitis II (Lansing) antibodies in the inhabitants of Bucharest. Third European Symposium of Poliomyelitis, Zurich, 1955, 63. St.cerc.inframicrobiol.,microbiol.,parazitol., 1956, 2, 1-2, 57.

A study on the presence of neutralizing antipoliomyelitis II (Lansing) antibodies in 108 persons of different sexes and ages in Bucharest, established that these antibodies are to be found in a high percentage in new-born infants, disappear at the age of 6-12 months, after which incidence increases, attaining a maximum titer at the age of 20-30, after which it decreases again.

It was not possible however to define the nature of these antibodies; they are either type or group specific or non-specific - paraimmune. The investigations carried out showed however that a close correlation can be established between the presence of these antibodies and receptivity to poliomyelitis, the morbidity rate being proportional to the number of negative results obtained in each age-group.

184. N.CAJAL, N.DRAGANESCU. The action of Largactyl in mouse experimental poliomyelitis with virus II (Lansing). Lucrările cele de a II-a Sesiuni științifice a I.M.F., Buc., 13-15 aprilie 1956, 92.

A study was carried out in 3 experiments on 84 mice inoculated by cerebral route with poliomyelitis virus type II (Lansing) on the evolution of the experimental disease under the action of Largactyl, administered daily by intravenous

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route, starting from the 4th day after infection (5 mgr. per kilogram body weight).

The experiments showed that, in comparison with the controls in which mortality was 100%, mortality was relatively low (85%) in the treated animals and incubation longer (14 days as compared to 10 days in the controls). The difference was more evident in the groups inoculated with 10^{-2} virus dilutions.

185. G.MARINESCU, N.DRAGANESCU, I.TURCU, I.FRIDMAN, V.CIUREZU, P.ROMAN. Interstitial pneumonia in poliomyelitis. Presse Med., 1956, 64, 94, 2207.

The present paper deals with 62 cases of poliomyelitis, most of which with ascending forms, followed up during the last 6 years. The macroscopic examination showed: 19 broncho-pneumonia, 22 marked congestions, 5 pleuro-pulmonary hemorrhagies, 1 pulmonary collapse, 1 massive emphysema, 1 pulmonary tuberculosis.

The microscopic examination revealed broncho-pneumonic foci in 11 cases, typical interstitial pneumonia in 10 cases (30%), mixed pneumonia (associated interstitial pneumonia) in 7 cases, atelectasis processes in 3 cases and hemorrhagic processes in 2 cases out of the 33 cases examined. The interstitial pneumonias were more frequent and wide-spread in small children who died during the first week of the disease, although the most typical lymphocyte infiltrations were to be found in children with a longer period of survival. Rich infiltrations were likewise found in the cases with more intense interstitial myocarditis and processes of perivascularitis in the nervous system.

These infiltrations seem to be due to the poliomyelitis virus, either because of its particular viscerotropism or its presence in the blood during the first part of the disease. The action of the regurgitated gastric fluid and aspired bucco-pharyngeal secretions may also be considered as adjuvant

factors. Stress is laid on the importance of interstitial pneumonia as an aggravating factor in evolutive poliomyelitis.

186. N.CAJAL. Present stage in anti-poliomyelitis vaccination.
"Viața Medicală" 1957, 3, 31.

This paper is a brief survey of our general knowledge on the protection and efficacy of the Salk vaccine. Stress is laid on the necessity of continuing investigations in view of improving this first effective vaccine, since the protection conferred by this vaccine with an inactivated virus is not complete. In view of the results obtained by various investigators, in experiments on live, modified poliomyelitis viruses, and the mechanism of immunity in viral diseases, the future of specific anti-poliomyelitis prophylaxis seems to belong to vaccines prepared with live, modified viruses.

Under the conditions of our country, and on the basis of recent serologic investigations carried out, it is believed that vaccination of children against poliomyelitis should be introduced as soon as possible, as a compulsory method of prophylaxis.

187. N.CAJAL, EL.OPRESCU, G.POPESCU. Investigations on neutralizing antipoliomyelitis II antibodies. St.cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 2, 201.

Comparative seroneutralization reactions with the Lansing poliomyelitis virus and the herpes virus in persons without poliomyelitis in their antecedents, showed a frequent parallelism between the titers of serum anti-herpes and anti-poliomyelitis type II antibodies. Additional investigations carried out with the sera of dogs plead in favour of the existence of other viruses with antigenic functions, common to those

of the Lansing poliomyelitis virus.

The data obtained showed that some of the positive results obtained in the seroneutralization test with the Lansing virus in persons without poliomyelitis in their antecedents should be interpreted with a certain caution. On the other hand, the fact that this reactivity to poliomyelitis and the frequency of antipoliomyelitis antibodies are inversely proportional, fully justifies continuing researches on the antigenic relations between the Lansing virus and the other viruses, in order to complete specific antipoliomyelitis prophylaxis with a non-specific prophylaxis of the herpes type, a method advocated by the Rumanian school of inframicrobiology.

188. G.MARINESCU, I.TURCO, A.FRIEDMAN, V.CIUREZO, N.DRAGANESCU. Poliomyelitic myocarditis. Minerva Medica, 1957, 48, 49, 1080.

Involvement of the heart in poliomyelitis is an eventuality to be feared, as it aggravates the prognosis. Circulatory, degenerative and especially inflammatory lesions stand at the basis of this affection. Eloquent microphotographic documents illustrate this paper. Almost half of the 52 subjects who died of poliomyelitis, exhibited important cardiac lesions, which favoured or were even the cause of death.

189. G.MARINESCU, I.TURCO, V.CIUREZO, A.FRIEDMAN, N.DRAGANESCU. Poliomyelitic myocarditis (anatomical-clinical study). La Semaine des Hôpitaux, 1957, 20/3, 330.

Study of 62 lethal cases of poliomyelitis - microscopic examinations were performed in 32 of these cases - revealed the existence of a typical acute myocarditis in 46.8 per cent of the cases; in 13 cases myocardiac and pericardiac

lymphopolyblastic infiltrations were prevalent and in another 2 cases infiltrations with polymorphonuclears were more accentuated.

The highest incidence and the greatest amount of lesions were as a rule encountered in the first days of the disease (the 4th and 6th day) in adults and older children, in cases accompanied by pulmonary complications (interstitial pneumonia, broncho-pneumonia) or in cases with intense lesions of lymphocytic perivascularitis involving almost the entire nervous system; these lesions were likewise encountered in several cases that appeared during the last two epidemics that broke out in our country in 1953 and 1955.

Cardiac insufficiency that accompanied the nervous disturbances was the decisive complication in at least 3 cases.

With a view to the pathogenic interpretation of these cardiac lesions, the authors discuss the various factors that may intervene alone, simultaneously or successively: tropism of the poliomyelitis virus, extension of the lesions of the nervous system, pulmonary complications, superimposed infections, biochemical disturbances, the stage of the disease and age of the patient. Some of the properties of the poliomyelitis virus and particularly its cardiac tropism represent the most important elements in the onset of poliomyelitic myocarditis.

190. I.ADERCA, M.IANCONESCU, N.CAJAL. Cultivation of the poliomyelitis virus on human amniotic cells. Morphologic changes. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 2, 4, 435.

The cytopathogenic effect is identical with regard to the morphologic aspect, with all three types of poliomyelitis viruses. The initial lesions appear in the cytoplasm in the form of vacuoles of various sizes. In a more advanced

stage the lesion also comprises the nucleus and the nucleole. These degenerate and the chromatin gathers into large clumps.

In the final stage, the cells are condensed in the form of round elements with a slightly acidophil cytoplasm surrounding a pyknosed or karyolysed nucleus.

191. ST.DRAGANESCU, A.PETRESCU, N.DRAGANESCU, O.BOTEZ, S.CALMANOVICI, GHERASIMESCU. Lethal bulbar poliomyelitis paralysis in a pregnant woman. Lesions of the reticular substance in the mother. Anatomo-pathologic examination of the fetal brain. St.cerc.neurol., 1958, 3, 265.

An anatomo-clinical study was carried out on an acute case of poliomyelitis bulbar paralysis ending in death after 3 days, due to respiratory insufficiency, in a pregnant woman in the 6th month. The microscopic examination showed severe bulbar lesions involving the nuclei of the cranial nerves and particularly the formation of the reticular substance, both in the group of the medium nuclei and that of the lateral nuclei. Death due to respiratory paralysis showed however that in this case the functional damage was greater in the group of lateral nuclei.

The brain of the fetus was likewise examined and phenomena of stasis were observed, as well as perivascular oedema and oedematous rarefaction of the surrounding tissue and even discrete hematic extravation.

192. G.MARINESCU. Renal lesions in the severe forms of poliomyelitis. (Poliomyelitic nephritis.) Inter-regional symposium on poliomyelitis, Vatra Dornei, May 22-23, 1958 - and Second Scientific session of the Institute for the Study of Poliomyelitis, the USSR Academy of Medical Sciences, Moscow, June 19-21, 1958.

The macroscopic examination of 70 cases of poliomyelitis most of them ascending forms, showed modifications of a prevalent medullar aspect in the kidney in 58 of the cases.

The macroscopic study performed in 23 cases revealed the presence of important lesions at the level of the tubules, glomerules and renal interstitium in 47,8 per cent of the cases.

The direct action of the poliomyelitis virus on the renal cell due to its tropism and the effect of adjuvant factors, affecting the metabolism of the nervous cell (anoxia caused by nervous, vascular, cardiac and respiratory lesions) seems to stand at the basis of the etiopathogeny of poliomyelitic nephritis.

The aggravating role of renal lesions in the evolution of certain forms of poliomyelitis is postulated.

193. G. MARINESCU. Hepatic lesions in severe forms of poliomyelitis (poliomyelitic hepatitis). (Physio-pathologic and therapeutic deductions.) The fifth European Conference of Poliomyelitis. Madrid, September 1958; The third Conference of Czechoslovakian virologists, Bratislava - Smolenice, October 14-17, 1958.

The occurrence of hepatitis is described in the course of severe cases (lethal) of poliomyelitis, in a proportion ranging between 70-80 per cent.

Hepatic damage is represented by: severe degenerative lesions (as a rule fatty degenerescence), inter-, peri- or even intralobular lymphohistiocyte or lymphoplasmocyte inflammatory infiltrations, hypertrophy and multiplication of reticulo-endothelial cells, discrete connective reactions and important vascular disturbances (stasis and especially oedema).

The author postulates that owing to its physiopathogenic consequences, hepatitis greatly aggravates the prognosis of the ascending or respiratory forms of poliomyelitis.

Besides reanimation and the well-known treatments, a protective treatment of the liver should likewise be applied.

194. G. MARINESCU, D. SARATEANU, E. NASTAC, E. OPRESCU, B. FUHRER.

Hepatic reactions determined by certain parapoliomyelitis viruses following inoculation into the portal vein of the rabbit. Third Conference of the Czechoslovakian virologists, Bratislava - Smolenice, October 14-17, 1958.

After inoculation of the MM and Coxsackie viruses into the vena porta of rabbits, the presence of interstitial hepatic lesions, representing the defence mechanism of the organism, were observed under anaesthesia and laparotomy (reaction of the reticulo-endothelial cells and lymphocyte infiltrations in the portal space.)

Mention is made of the part played by the Kupffer cells in the diseases due to the MM and Coxsackie viruses.

195. ACAD. ST. S. NICOLAU. Data and considerations on the para-immunity relationship between poliomyelitis and herpes. St. cerc. inframicrobiol., microbiol., parazit. 1958, 2, 3, 293.

An attempt was made to determine the influence of the state of antipoliomyelitis immunity on experimental herpes and the influence of herpes on the evolution of poliomyelitis, by means of skin herpes inoculations.

The great number of negative results, starting from the second month after the beginning of poliomyelitis, shows an initial antiherpes resistance, enhanced by paraimmunity

brought about by the onset of antipoliomyelitis immunity.

This unquestionably shows that in poliomyelitis, besides the specific refractory state to the poliomyelitis virus (immunity), there is likewise a non-specific, hetero-~~logous~~ resistance (para-immunity) to the herpes virus.

It was also demonstrated that antipoliomyelitis vaccination with the Salk vaccine induces in the organism resistance to arhythmic recurrent herpes.

Para-immunity between herpes and poliomyelitis raises the problem if experimental herpetization might not be made to play a part in antipoliomyelitis control, particularly where antipoliomyelitis vaccines are not available.

196. N.CAJAL, I.ADERCA, M.IANCONESCU, E.OPRESCU, A.BIRCA.

Incidence od seroneutralizing antibodies to anti-
genic strains I, II, and III of the poliomyelitis
virus in the inhabitants of Bucharest, St.cerc.
inframicrobiol., 1959, 10, 3, 281.

A study was carried out on the incidence of sero-neutralizing antipoliomyelitis antibodies in the inhabitants of Bucharest, that had not been vaccinated or had not suffered from clinical forms of poliomyelitis.

Seroneutralization was performed in cultures of human embryo cells obtained by trypsinization; 137 sera were examined: 80.3% presented antibodies for at least one type of poliomyelitis virus, and 19.7% were negative. Of the positive sera, 31.8% were positive for a single immunologic type of poliomyelitis virus; 35.4% were positive for two types and 32.7% for three types. The younger age-group presented two stages: between 1-3 months persistent maternal antibodies were found in 87% of the cases, between 4-6 months incidence decreased to 14% and the antibodies were almost absent (5%) between 7-12 months. Starting from the age of one year, the incidence of antibodies swiftly increased especially

those to type I, attaining 100% in the age-group of 1-2 years, a percentage that is maintained after 20 years. The authors recommend starting antipoliomyelitis vaccination at the age of 3 months.

197. EL. LISSIEVICI-OPRESCU. The anatomo-pathologic study of poliomyelitis in mice. Lesions of the reticulo-endothelial system. St. cerc. inframicrobiol., 1959, 10, 3, 341.

A study was carried out on the lesions of the reticulo-endothelial system in mice inoculated by intracerebral route with the poliomyelitis virus II (Lansing). The material used was brain and spinal cord collected at various moments after inoculation, the sections obtained being stained by the Mann, hematoxilin-eosin, Giemsa and Niculescu-Horneț methods. Analysis of the material showed that the morphologic substrate of experimental poliomyelitis in mice is represented not only by the well known neuronal lesions, but also by endothelial and neuroglial alterations. The latter appear at an early date - already in the pre-paralytic period and are unequally distributed, the virus presenting an affinity for certain areas. The criterion of this affinity does not seem to be of a functional order, since the lesions may be found both in the motor areas and in the areas affected to the sensitive and vegetative functions.

The type of these changes is hyperplastic: turgescence and hypertrophy of the endothelial elements and modification of their shape; in some cases, endothelial elements detached from the capillary wall can be detected in the perivascular parenchyma.

198. N. CAJAL,

M. IANCONESCU, I. ADERCA, G. DANIELESCU, A. BIRCA, Study of the incidence of antipoliomyelitis antibodies type I, II and III in non-vaccinated persons from rural localities in the Rumanian People's Republic. St.cerc.inframicrobiol., 1960, 11, 1, 21.

This paper, completing previous studies concerning the incidence of antipoliomyelitis types I, II and III in the population of Bucharest, deals with a study in human embryo cell cultures of the proportion of these antibodies in 3 villages in the country, in which paralytic polio cases were only exceptionally reported.

Neutralization tests with the sera of 135 individuals of different sex and ages showed that:

- The degree of occult immunization to poliovirus is very high also in rural environment (74.82 per cent of sera contain antibodies for at least one antigenic type of poliovirus).

- In the first years of life, a predominance of types II and III exists, especially of type III.

- Antibodies type I, in contrast to findings in urban environment, do not increase explosively, but slowly and progressively, exceeding the level of antibodies for the other poliovirus types only after the age of 12.

199. N. CAJAL, ADERCA, M. IANCONESCU, E. OPRESCU, G. DANIELESCU, A. BIRCA. The incidence of antipoliomyelitis antibodies in children in the Rumanian People's Republic. Microbiol., Parazitol., Epidemiol. 1960, 1, 47.

In order to establish the incidence of seroneutralizing antibodies to the 3 poliovirus antigen types in the infantile population of the country, investigations were carried out in Bucharest and in 3 villages.

The sera of 219 children of different sex and ages, not vaccinated against poliomyelitis and which did not present in their antecedents signs of poliomyelitis, were used for neutralization tests against poliovirus types I, II and III (100 CID₅₀), done in human embryo cell cultures.

The results showed that of 219 children, 187 presented antibodies to at least one poliovirus type (85.3 per cent), which proves an intense occult immunization due to clinically unapparent diseases. Thus, the incidence of antibodies to at least one poliovirus type, which was very high in the first 3 months of life (due to maternal antibodies), gradually fell in the following months, minimum values being found in the 7-12 months age-group; at 1 year, these values suddenly increase, attaining the level of maternal antibodies and continue to increase with time, so that in the 13-15 years age-group no negative serum is found.

In terms of the antigenic type, childhood is characterized by predominance of type I in Bucharest, and type II, and particularly III, in rural environment.

200. G. MARINESCU, I. DINU, I. PREDESCU, S. DIACONU, M. STARK, A. MEROVICI, S. NICOLAU, M. IVOPOL. Comparative electrophoretic modifications in the sera of vaccinated and non-vaccinated poliomyelitis patients. The 4th scientific session of the Institute of Poliomyelitis, Moscow, May 17-21, 1960.

Electrophoretic examination of the protein fractions in 45 sera samples from 30 poliomyelitis patients, 9 of whom vaccinated against poliomyelitis with Salk vaccine, showed in general hypoalbuminemia with increase of gamma₂-globulins in the acute stage of the disease and gamma-globulins in a late stage.

In a smaller number of cases (10 per cent), total hypoproteinemia was observed and in a more severe case, hypoglobulinemia with hyperalbuminemia. As a rule, beta-globulin values were higher in the mild and favourable cases.

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The electrophoregrams of previously vaccinated (Salk vaccine) polio patients did not significantly differ from those of non-vaccinated patients, which represents a further argument, apart from the epidemiologic and clinical factors, for the application of the live attenuated virus vaccine. In general, gamma-globulin values are higher in the first weeks of the disease in vaccinated patients, increasing still further in convalescence and staying level for a long time, by comparison with the non-vaccinated patients, examined at the same stage of the disease. In a lethal case, which had been vaccinated against poliomyelitis, beta-globulin values were high; in non-vaccinated patients this points to a favourable prognosis.

201. ACAD.ST.S.NICOLAU, N.CAJAL, M.CEPLEANU, I.ADERCA, N.M. CONSTANTINESCU, M.IANCONESCU. Investigations concerning the peritoneal poliovirus neutralization test. Comun.Acad.R.P.R. 1960, 10,12, 1157.

Application in experimental poliomyelitis of the test previously used by S.Nicolau and co-workers in rabies, called the "peritoneal neutralization test", showed its utility for assessing the state of immunity induced in the mouse organism by different polioviruses and vaccines (wild viruses type I, II, III, modified Sabin type I strain, the Salk/Connaught, Canada, lot 108-1 and the live Sabin virus vaccine prepared in the Poliomyelitis Institute of Moscow.)

The peritoneal test is highly type characteristic and intensely positive after immunization with wild or "attenuated" polioviruses, and negative after attempts at immunization with inactivated virus vaccines, of the Salk type.

It is concluded that the peritoneal test can replace the classical neutralization test, which is difficult to apply individually to small laboratory animals, and thus becomes a useful method for immunologic investigations in poliomyelitis.

202. N.CAJAL, M.IANCONESCU, M.CEPLEANU, I.ADERCA, M.GRUIA, G.MARINESCU, C.BABA, Y.COPELOVICI, G.POPESCU, G.DANIELESCU, O.BURDUCEA, P.ATHANASIU, M.CIOBANESCU, Y.PETULESCU. Investigations on seroneutralization antibodies in persons vaccinated against poliomyelitis with inactivated and live "modified" viruses. Report read at the Symposium "10 years from the founding of SANEPID" Bucharest, April 28, 1961.

In 1960, the authors administered experimentally to 1,200 children the vaccine prepared by the Poliomyelitis Institute of Moscow, with A.Sabin's strain.

Interesting conclusions were drawn from the results obtained in a comparative study on the evolution of neutralizing antibodies in 600 of these children and 371 sera from children vaccinated with the Salk vaccine, on the one hand, and on the other from children that had not been previously vaccinated.

In the latter children, without poliomyelitis in their antecedents, neutralizing antibodies against at least one antigenic type, were found in a proportion of 85.3%.

In the children vaccinated with the Salk vaccine, the proportion of positive sera was similar (82.5 per cent) and paradoxically, in some age groups (1-2 years) even lower. In children vaccinated (1-7 years) with the live virus vaccine, the incidence of positive sera was 92 per cent. In the same age-group, the Salk vaccine gave an incidence of positive sera of 76.5 per cent.

Of 37 trinegative children, 32 (86.4 per cent) elaborated antibodies for the type of virus in the vaccine.

Virus elimination in feces was almost constant in the trinegative cases and inconstant in the children with positive sera previous to vaccination.

The children with serum antibodies induced by administration of the Salk vaccine, regularly eliminate the virus following its multiplication in the intestine, in opposition

to those immunized by occult, unapparent infections.

The results point to the superiority of the vaccine prepared with live, modified viruses, and its obligate application on a wide scale.

203. N.CAJAL, M.IANCONESCU, I.ADERCA, E.OPRESCU, G.DANIELESCU, A.BIRCA. Comparative investigations on the incidence of antipoliomyelitic antibodies in vaccinated and non-vaccinated children in the Rumanian People's Republic. St.cerc.inframicrobiol. 1960, 11, 4, 549.

A comparative study in human embryo cell cultures of the incidence of polio-type neutralizing antibodies in 371 children aged 4 months to 7 years, before or after antipoliiovaccination with the inactivated vaccine, showed no factual differences between the two groups.

Moreover, investigations on antipolio antibodies in 45 children of a closed community, carried out 6 months after vaccination showed that in spite of the vaccination, 33 (73 per cent) of the children were trinegative and only 12 (27 per cent) presented antibodies for one or two polio-virus antigen types (13 per cent for types I and II, 6 per cent for type III).

In view of these results, the authors recommend substitution of the inactivated Salk vaccine by a vaccine prepared with live, modified viruses.

204. G.MARINESCU, P.ATHANASIU, I.PREDESCU, C.TAINDEL, C.BOCIRNEA, Lesions of the central nervous system in patients with the respiratory form of poliomyelitis, maintained for a long time in respiratory apparatus. Report read at the Institute of Inframicrobiology, November 20, 1961.

The clinical evolution of two patients suffering from a severe respiratory form of poliomyelitis, who were maintained for about 6 weeks in a respiratory apparatus, without retrocession of the secondary paralyses, is described.

Histopathologic examination showed massive degenerative and older medullar vascular lesions, belonging to the polio infection and more recent abiotrophic processes of cerebral malacia, patognomonic states of "exceeded coma" against a background of older discrete inflammatory lesions.

205.

G.MARINESCU. Recent advances in the specific control of poliomyelitis. Spitalul, 1961, 2, 110.

The latest data concerning the sero- and vaccino-prophylaxis of poliomyelitis are presented. Improvement in the preparation of attenuates vaccines and especially the remarkable results obtained with the live attenuated polio-virus vaccine are emphasized.

206. M.VOICULESCU, G.MARINESCU, I.PREDESCU, P.RADULESCU, A. RADULESCU. Some poliomyelitis aspects in persons immunized with the inactivated antipolio vaccine. Spitalul. 1961, 2, 167.

Clinical study of 38 previously vaccinated polio cases showed varied clinical forms, without any difference with the non-vaccinated polio cases; overall mortality was 10 per cent in the author's observations and 7 per cent for the entire country.

No marked differences were observed between the cases inoculated with the Lépine vaccine (29 cases) and Salk vaccine (9 cases), and neither between the completely and incompletely vaccinated individuals. No polio case was reported among the children who had received the booster dose.

As a rule, the clinical evolution was more favourable in vaccinated children, the period in which retrogression of the paralysis occurred was shorter and no indelible sequelae developed.

In more than 2/3 of the cases, favouring factors were observed: injections in the paralyzed member (9 children), weakening and fatiguing diseases (13 children), other factors (4 children).

207. G.MARINESCU. On the problem of extraneuraxial lesions in poliomyelitis infections. Stud.cerc.infra-microbiol., 1961, 12, supl.,223.

A description is given of various lesions, such as interstitial myocarditis (46.8 per cent), interstitial pneumonitis (30 per cent), interstitial hepatitis (70 per cent) and glomerulo-tubulo-nephritis (47.8 per cent), occurring in the course of severe forms of poliomyelitis which resulted in death.

The direct action of the poliovirus within the pattern of viraemia and of its viscerotropism, as well as the existence of factors related to the responsiveness of the body, the type of disease and its course, age, additional infectious elements and organ correlations, lie at the basis of the mechanism resulting in the formation of these visceral lesions.

The presence of such lesions in severe forms of the disease may aggravate the prognosis "quo ad vitam" of poliomyelitis and should, therefore, be well-known, detected as early as possible and treated in time.

208. I.FRIEDMAN, S.DUMITRESCU, I.SAMUEL, T.SANDULESCU. Coxsackie virus strains isolated from cases of paralytic poliomyelitis in Bucharest. St.cerc.infra-microbiol.,microbiol.,parazitol.,1955,6, 1-2, 51.

In october 1954, two strains of Coxsackie-virus were isolated, by inoculation to new-born mice of fecal suspensions taken from 12 patients hospitalized in the clinic of Contagious diseases Bucharest.

The patients from which these strains were isolated, ~~exhibited~~ clinical signs of paralytic poliomyelitis. The anatomo-pathologic examination showed that the two strains of Coxsackie virus belonged to the G.Dalldorf type.

209. B.DAN, I.FRIEDMANN. The Coxsackie virus isolated from patients with paralytic poliomyelitis. Etiologic relations. St.cerc.inframicrobiol.,microbiol., parazitol., 1956, 7, 1-2, 51.

The connexion between the Coxsackie virus and various neurologic syndromes, including paralytic, poliomyelitis type syndromes, is discussed.

A description is given of two clinical cases (isolated peripheral facial paralysis and flabby tetraparesis with affection of the VIth pair) in which the Coxsackie virus was found in the stools. The seroneutralization test yielded high antiCoxsackie antibody titres.

The apparent epidemiologic and experimental antagonism between the Coxsackie virus and the poliomyelitis virus, as well as the relative scarcity in the Rumanian People's Republic of Coxsackie virus infections - a virus whose ubiquity is well known - represent the arguments lending support to the Coxsackie etiology of the paralytic syndrome, of poliomyelitis type, described in this paper.

210. R.PORTOCALA. Electrophoretic proteinogram of the muscle of new-born mice. Changes occuring in the course of infection with the Coxsackie virus. Riv.dell' Inst.Sieroter.Italiano, 1958, 32, 2, 107. Comuni-cările Acad.R.P.R., 1957, 7, 12, 1085.

A comparative electrophoretic study of the protein fractions extracted from the skeletal muscles of newborn mice and the same proteins extracted from newborn mice infected with the Cocksackie virus was carried out.

This study made it possible to establish the existence of three protein fractions, different as regards their migration speed and temporarily called "a", "b" and "c".

In the course of experimental infection with the Cocksackie virus, an increase was observed in the proportion of the "b" fraction, parallel to a decrease in the proportion of the "c" fraction.

211. J.SAMUEL, N.DRAGANESCU, S.DUMITRESCU. Research-work on the Cocksackie viruses. Giorn. Malattie Infettive e Parassit. Ed.Minerva Medica, 1957, 9.

Ten strains of Cocksackie virus were isolated by inoculation to newborn mice of feces suspensions from patients with various affections: paralytic poliomyelitis, aseptic meningitis, myalgia, herpangina, influenza, etc.

From the anatomo-pathologic view-point, one of the strains presented a longer period of incubation than the others, causing histologic modifications of the nervous system; the others did not produce any massive alterations of the muscular tissue.

The authors try to establish etiologic relations between the presence of the Cocksackie virus in the stools of the patients and certain clinical manifestations, such as paralytic poliomyelitis, aseptic meningitis and herpangina.

212. S.MATEESCU, N.CAJAL, Y.COPELOVICI, R.CAPRARU. Apparent clinical infection with the Cocksackie virus (A₂) in the adult white mouse irradiated with X rays. St.cerc.inframicrobiol.,microbiol.,parazitol.,1958, 9,4, 463.

The effect of irradiation with X rays on the sensitivity of the adult white mouse to the pathogenic action of the Coxsackie virus group A is studied. The animals were irradiated with a Therapix apparatus with a 24/24 cm. radiation field, at a distance of 40 cm., during 30 minutes, each animal receiving during a single exposure a total dose of 600 r. (180 KV, 10 mA, 0.5 mm Cu filter).

After irradiation, the animals were inoculated by intracerebral or intramuscular route with a 200 LD₅₀ of Coxsackie virus suspension (A₂). The same virus dilution was inoculated at the same time to non-irradiated adult animals.

The results showed that 66% of the irradiated animals inoculated by cerebral route, contracted the lethal paralytic disease. The biologic tests showed that the etiologic agent of this paralytic affection was the Coxsackie virus. A study of the virus in several organs and tissues (brain, pancreas, muscles, etc.) showed that the virus persists longer in the irradiated than in the non-irradiated animals. Titration of the virus likewise showed a more intense multiplication of the virus in the tissue of rats submitted to irradiation.

The results of the experiment raise the problem of the possibility of carrying out experiments with the Coxsackie virus on irradiated adult mice.

213. I.SAMUEL, N.DRAGANESCU, S.DUMITRESCU. The presence of the Coxsackie virus in clinical affections with different characters. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 9, 2, 193.

Ten Coxsackie virus strains were isolated from the feces of 186 patients, hospitalized in the Clinic of contagious diseases in Bucharest, during the November 1954 - June 1956 period, with a diagnostic of poliomyelitis, meningitis, herpangina, influenza and 4 poliomyelitis contacts.

Separation and identification of the infectious test was not possible with two of these strains.

Of the 8 other strains, 2 were isolated from 2 children with benign paralytic poliomyelitis; one strain was isolated from a child that had been in contact with a poliomyelitis case during the 1957 summer epidemic; 3 strains were isolated from 2 children and one adult with a clinical diagnosis of aseptic meningitis or meningo-encephalitis and, finally, 2 strains from 2 children with a clinical diagnosis of herpangina.

From the anatomo-pathologic view-point, only one of the 10 strains isolated produced minimal lesions of the muscular tissue and discrete modifications in the central nervous system. The other 9 strains gave rise to massive lesions in the muscular tissue, without alterations of the central nervous system.

214. N.CAJAL, S.MATEESCU, Y.COPELOVICI, E.PACURARU. Transmission of the Coxsackie virus (A_2) to adult white mice treated with P^{32} . Comunicările Acad.R.P.R. 1959, 9, 1, 81.

Wishing to establish if internal irradiation with beta rays can influence the sensitivity of the adult mouse to the pathogenic action of the Coxsackie virus (A_2), strain which is not normally pathogenic to the adult mouse, the authors inoculated by intracerebral route 200 LD₅₀ of a Coxsackie virus suspension (A_2) to adult white mice, which had been previously injected with an isotonic solution of P^{32} (Na_2HPO_4), in a dose calculated for an activity of 50 μC .

The experiments showed that internal irradiation with the beta rays emitted by radioactive phosphorus (P^{32}) sensitizes the adult white mouse to the pathogenic action of the Coxsackie virus (A_2), virus which is usually pathogenic only for the new-born animal.

After intraperitoneal introduction of a radioactive solution of Na_2HPO_4 (P^{32}), inoculation by cerebral route of the Coxsackie virus (A_2) gave rise in 81.8% of the animals to a paralytic lethal disease, with prolonged persistence of the virus in certain organs and tissues (brain, pancreas, spleen, kidneys, muscles) as compared to controls.

These results are due, in the opinion of some authors, to a modification of the resistance of the animal organism under the action of beta rays and to a more intense multiplication of the Coxsackie virus in the body of animals treated with P^{32} .

215. N. CAJAL, S. MATEESCU, Y. COPELOVICI. Sensitization of adult white mice to the pathogenic action of the Coxsackie virus following ionizing irradiation (Roentgen and beta rays.) Acta virologica, 1959, 3, 167.

The effect of radiations (Roentgen and beta rays) on the sensitivity of 14-18 gr adult white mice to the pathogenic action of the Coxsackie virus, type 2 group A, inoculated after irradiation, is studied.

Irradiation was applied externally and internally. For external irradiation (Roentgen) a 600 r dose was applied, employing a Therapix apparatus, 180 kv, 10 mA, 0.5 mm Cu filter, at 40 cm. distance, 24 x 24 cm. localizer, during 13 minutes.

Internal irradiation (beta rays) was done with Na_2HPO_4 by intraperitoneal injection of P^{32} , with an activity of 50 μC .

The conclusion is reached that external irradiation with Roentgen rays or internal irradiation with radioactive phosphorus injected intraperitoneally sensitizes the adult white mouse to the pathogenic action of the Coxsackie A_2 virus, inoculated intracerebrally.

Paralysis and the lethal disease appeared in 82% of the mice in the case of irradiation with β rays (P^{32}) and in 66% of the cases with Roentgen irradiation.

The mortality rate in controls ranged between 0 and 0,8%. The virus was found in the organs and tissues of the irradiated animals for a much longer period than in non-irradiated animals.

216. R.PORTOCALA. Electron images of myofibrils in new-born mice, in the course of infection with the Coxsackie virus. Riv.dell'Inst.Sieroter. Italiano 1959, 34, 4, 263.

The changes that appear in the myofibrils of new-born mice in the course of infection with the Coxsackie virus (group A) are studied in the electron microscope. The protrusion of **actomyosin** at the level of the Z striae, with disappearance of the N striae and homogenization of the Q segment, followed by hyaline degenerescence in the advanced phases of the disease are successively described; mitochondria were the only formations revealed in the myofibrils during this interval of time. An exaggerated fragility of the myofibrils, abundance of collagenous tissue and, in the pre-coma phase, the appearance of regeneration myofibrils was likewise observed.

ECHO

217. M.GRUIA, Y.COPELOVICI, I.POPESCU. Isolation of an ECHO 12 virus from a meningitis patient with exanthema. St.cerc.inframicrobiol. 1961, 11, 1, 107.

Isolation, for the first time in the country, of ECHO 12 virus, from a child with moderate meningeal syndrome, is reported. The virus was isolated in trypsinized human embryo

cell cultures. The presence of ECHO 12 virus is reported for the first time in serous meningitis.

218. G.MARINESCU, LIU CIUN PAE. Lesions induced by ECHO virus (type 9) in cortisone treated adult and new-born white mice. Stud.cerc.inframicrobiol. 1960, 11, 3, 409.

Using ECHO 9, carried through numerous passages on monkey kidney cell and human embryo cell cultures, a moderate myositis process was obtained in the new-born mouse inoculated by intramuscular route and a moderate hepatitis process in the new-born and adult mouse, inoculated by intraperitoneal route.

Association of cortisone, 3 days and 1 day before inoculation of ECHO virus, resulted in diminution of the inflammatory and degenerative processes, due to its antiedematous and antiinflammatory effect.

A comparative study should be done with freshly isolated strains, in order to establish if their pathogenicity is modified, and if their cytopathic effect may serve for the diagnosis of ECHO infections.

219. M.GRUIA, Y.COPELOVICI, V.ARMASU, C.LECCA, V.VASILESCU. Investigations of the incidence of hemagglutination-inhibition antibodies to certain ECHO virus strains in some communities in Bucharest. Stud.cerc.inframicrobiol: 1960, 11, 4, 579.

A study was carried on anti-ECHO hemagglutinating-inhibiting antibodies in the sera of 385 healthy individuals from two industrial and a military unit in Bucharest. Anti-ECHO 7 antibodies were found in 63.3 per cent of the persons investigated, anti-ECHO 9 antibodies in 36.7 per cent and anti-ECHO 19 antibodies in 31 per cent.

A parallelism was seen to exist between the incidence of anti-ECHO 9 and 19 antibodies, however with difference in the titers.

220. M.GRUIA, Y.COPELOVICI, M.CIOBANESCU, M.GROZA, M.DAMIAN.

Comparative study of complement fixing and hemagglutination-inhibiting antibodies to ECHO 11 and ECHO 19 viruses in a children's community.

Stud.cerc.inframicrobiol., 1961, 12, suppl., 203; Rev.Sci.Méd. 1961, 6, 1-2, 53.

In a closed children's community, hemagglutination-inhibiting and complement fixing antibodies to ECHO 11 and ECHO 19 viruses were found to be totally absent in the 0-6 months age-group. Low-titre antibodies to ECHO 11 antigen (1/32 - 1/64) and higher titres to ECHO 19 antigen were demonstrable in the hemagglutination-inhibition test.

The almost similar results of both tests determine the authors to suggest the hypothesis that within the ECHO virus group the complement fixing test may be considered as type-specific.

221. G.MARINESCU, G.SORODOC, D.SARATEANU, S.DUMITRESCU.

A study on the agglutinating properties of certain ECHO virus strains versus human erythrocytes of different groups and the erythrocytes of some animal species. Stud.cerc.inframicrobiol. 1961, 12, suppl., 215; Rev.Sci.Méd. 6, 1-2, 61.

A description is given of the agglutination reaction of type 11, 12, 19 ECHO virus strains with human red cells belonging to various groups of the RH-and ANO-systems. As a rule, no titre differences were recorded. Obviously the reaction is dependent on the cell receptors involved in the

enzymatic process occurring at the level of the red cell and has no relation with the specific blood group antigens.

The agglutination reaction of some ECHO virus strains with strongly agglutinated human erythrocytes, yielded weakly positive and inconsistent results and low titres (1/10 - 1/20) with the red cells of puppies, rabbits, hamsters and mice. Two of the 6 ECHO virus strains yielded moderate agglutinating titres (1/40 - 1/80) with monkey red cells. This raises the problem of the heterogeneity and possible correlation of human orphan viruses with animal strains.

222. G.MARINESCU, P.ATHANASIU, O.MITROIU. Interstitial pneumonia and experimental encephalitis in new-born white mice, inoculated with the hemagglutinating ECHO 11 virus. Report read at the Institute of Inframicrobiology. October 16, 1961.

Inoculation of the hemagglutinating ECHO 11 strain into the cervico-dorsal lipo-muscular mass, induces in new-born white mice encephalitis and interstitial pneumonia lesions. From the lung and brain of the mice sacrificed 1 and 3 weeks after inoculation, the virus was isolated by inoculation into monkey kidney cell cultures.

223. M.K.VOROSHILOVA, G.MARINESCU, V.I.JEVANDROVA, M.S.BALAIAN. Investigations on the hemagglutination of some ECHO virus strains isolated in the USSR during antipoliomyelitis vaccination. Report read at the Institute of Inframicrobiology, July 4, 1960.

Hemagglutination with human group O erythrocytes of 16 ECHO virus strains (types 8, 11, 12 and 19) isolated in the USSR from the feces of children immunized with the live attenuated Sabin polio-virus vaccine, was intensely positive for 6 virus strains (two ECHO 11 strains, three ECHO 12 strains and one ECHO 19 strain.)

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No definite parallelism was observed between the hemagglutinating and infective potential of these strains.

Hemagglutination-inhibition with type hyperimmune sera yielded much higher titers than in the controls; inhibition of cross hemagglutination gave very low titers, which confirms the specificity of the test and the possibility of using it for diagnostic purposes.

VI

NEUROVIRAL DISEASES

224 - 339 .

224. R.PORTOCALA, N.CAJAL. Histopathologic alterations of the retina neurons following experimental infection with the herpes virus. Bul.Stiint. Acad.R.P.R., Sect.St.Med. 1949, 1, 5, 411.

Two strains of herpes virus, a neurotropic and a dermatropic strain, were inoculated to rabbits on the scarified cornea or by intracerebral route. The cellular lesions, produced by the herpes virus at the level of the retina, were studied. The nuclei of the neurons that constitute the chain of ganglionic cells are the site of alterations characteristic of the herpes virus when it is inoculated intracerebrally. The virus propagates by **septinauritic** route along the optic nerves, reaching the retina, where it localizes in the nuclei of the ganglionic cells; here it multiplies and produces veritable colonies and typical inclusions. The longer is the incubation period of the experimental disease, the greater is the number of neurons affected.

Inoculated on the scarified cornea, the herpes virus did not give **rise** to any histopathologic alteration in the retina. The route taken by the germs from the inoculated cornea to the retina being longer in this case, it explains why the rabbits infected by the corneal route do not present herpes alterations of the retina.

In the light of the data of this paper, it is assumed that "cortical blindness" of experimentally infected rabbits is due to a great extent to the alterations induced by the herpes virus in the retina and that certain disturbances encountered in human ocular pathology, whose etiology is not well established, could be explained by localization of the herpes virus in the retina and induction of certain lesions in the ganglionic neurons.

225. ACAD.ST.S.NICOLAU, G.BALMUS, N.CAJAL. Transformation of the herpes recidivans virus into herpes simplex virus by adaptation to the rabbit brain. St.cerc.inframicrobiol., 1950, 1, 2, 137.

The herpes virus, collected from the vesicles of 2 herpes recidivans patients, was inoculated by swabbing on the scarified skin of 4 persons. After 3-4 days, herpes with a relapsing character appeared in 2 of these persons. On the other hand, the initial virus was also inoculated to a group of rabbits on the scarified cornea, causing a keratitis followed by typical encephalitis. A number of 5 serial passages were performed on the brain of a rabbit, resulting in a shorter period of incubation, as well as increased aggressivity of the virus. Brain fragments from the last passage were inoculated to 5 persons by swabbing of the scarified skin. Inoculation was positive in 3 of the 5 cases and no relapse of the herpes eruption was observed in these patients, which were followed up during 8 months. The induced herpes presented the symptomatology of herpes simplex. Therefore, by adaptation to the central nervous system of the rabbit, the herpes recidivans strain behaves like an ordinary herpes simplex strain.

226. N.CAJAL, R.DINU, P.STROESCU. The herpes virus and cataract in rabbits. St.cerc.inframicrobiol., microbiol.; parazitol., 1951, 2, 1, 163.

The authors describe a case of cataract in a normal rabbit which had stayed several days in the same hutch with a rabbit inoculated by corneal route with the herpes virus, closely resembling the cases reported by Nicolau and Koprowska in 1931. About a month after having being put together with the rabbit inoculated with the herpes virus, the non-inoculated animal presented a mature cataract of the right crystallin and an incipient, posterior polar cataract in the left crystallin.

In order to prove that the rabbit had contracted a subclinical herpes following contagion in the hutch and had ~~then~~ become immunized, it was inoculated with the herpes virus on the left cornea. Twelve days after inoculation, when the control animals died of herpes kerato-encephalitis, the rabbit with cataract, which had survived, was sacrificed and the brain examined histopathologically. On the sections, stained by the Nissl, Spielmeyer and ~~Mann methods~~, the picture of an old herpes meningoencephalitis was found in the left hemisphere together with an area of softening in the occipito-calcarine cortex and in the axis of Ammon's horn; in the right hemisphere disappearance of the pyramidal cells in certain spots and of some cells in Ammon's horn could be observed: at the level of the entorhinal zone of the pyriform lobe, herpetic inclusions were noted.

Both the mature and the incipient cataract may be the result of trophic disturbances caused by the lesions described, a fact which might justify an eventual cortical representation of the trophic disturbances of the crystallin.

227. ACAD.A.KREINDLER, N.CAJAL, I.OLTEANU. The action of tellurium in intracerebral injections in experimental herpes encephalitis of the rabbit. Bul.Stiint.Acad.R.P.R. Sect.St.Med., 1951, 2, 1, 329.

In view of establishing the way in which experimental herpes encephalitis in the rabbit is influenced by the parallel evolution of a toxic encephalitis of the tellurium encephalitic type, a study was carried out on the effect of an intracerebral injection of black metallic tellurium, at the height of a herpes neuraxon infection.

The experiments showed that injections of a 1% black metallic tellurium suspension in small amounts (0.10 ml) into the brain of rabbits at the height of herpes neuraxon

infection prolongs the evolution of the disease, sometimes even leading to recovery. The attempts made at ~~transmitting~~ this viral disease by intracerebral inoculations, starting from the brain of these rabbits, yielded negative results, demonstrating the existence of an autosterilization process.

Intracerebral injection of a larger quantity of the tellurium suspension (0.25 ml.) causes death of the animals in the following 24 to 36 hours. Intracerebral passages of brain emulsions from these rabbits constantly yielded positive results.

From the histopathologic view-point, a large number of characteristic inclusions were found in the first group of animals.

228. R.PORTOCALA, N.CAJAL, E.LISSIEVICI. Hyperglycemia following experimental herpes encephalitis in the rabbit.
Comunicările Acad.R.P.R. 1951, 1, 567.

Experimental herpes encephalitis in the rabbit, subsequent to sub-dural inoculation, is followed by a significant increase of glycemia. This increase begins on the second day after inoculation, attaining maximum figures on the day in which the animal dies. Saline solution and normal brain suspension do not modify the glycemia curve. Glycosuria is absent in the animals with herpes.

229. N.CAJAL, E.LISSIEVICI. The evolution of glycemia in experimental herpes infection in the rabbit.
St.cerc.in Framicrobiol., microbiol., parazitol., 1952, 2, 3-4, 161.

The glycemia curve in a group of 15 rabbits inoculated on the cornea with the herpes virus is studied. In 9 of the animals an increase of this curve was observed, running parallel to the appearance of the characteristic keratitis and

encephalitis. The glycemia curve continued to rise until death of the animals occurred.

Similar results were obtained in another group of 9 rabbits, inoculated by intracerebral route with the herpes virus, the symptoms of herpes encephalitis developing parallel to an increase of the glycemia curve.

A comparison is made between the hyperglycemia obtained under experimental conditions and human diabetes and the viral etiology of diabetes, which could be caused either by the herpes virus or by another virus capable of modifying sugar metabolism, is assumed.

230. N. CAJAL, R.DINU, S.MATEESCU, G.POPESCU. Evolution of experimental herpes neuroinfection in rabbits with a modified reactivity of the central nervous system. Comunicările Acad.R.P.R. 1953, 3, 9-10, 341.

The comparative study of the evolution of experimental herpes in rabbits, with a modified reactivity of the central nervous system, showed that the incubation period is much shorter in the animals submitted to repeated electroshocks and slightly shorter in the animals in which the reactivity of the central nervous system was inhibited by chloral hydrate.

The results obtained showed the importance of the cerebral cortex in the defense of the organism against inframicrobial agents.

231. ACAD.ST.S.NICOLAU, G.MARINESCU. On the possibility of paraspecific prophylaxis by means of experimental herpetization in poliomyelitis. Report read at the Fourth anti-poliomyelitis International Symposium, Bologna, September 1956.

Previous researches showed that the reaction of the organism, spontaneously infected with the poliomyelitis virus, against experimental herpes inoculation, definitely indicated a progressive attenuation of the usual sensitivity to the inoculated virus (duration and aspect of the eruption). This attenuation which begins in the second month after the onset of poliomyelitis, is later transformed into a strong resistance. Based on the assumption of the possibility of developing a ~~parasitism~~ refractory state against poliomyelitis, following herpes immunization, herpetization of persons liable to contamination is suggested. This paraspecific prophylaxis of Heine-Medin's ~~disease~~ might be performed at the same time as the specific vaccination.

232. N.CAJAL, C.BABA. Action of vitamin C in experimental herpes neuro-infection. St.cerc.inframicrobiol., microbiol., parazitol., 1957, 8, 1, 23.

Vitamin C administered by intramuscular route to rabbits inoculated with the herpes virus on the cornea, acts differently according to the law of large and small Danielopolu doses: in small doses it prolongs the life-span of experimentally inoculated animals, whereas in large doses it curtails the duration of the disease as compared to the controls.

The mechanism of action of these differences seems to reside in the stimulation of acetylcholin and gamma-globulin production.

233. S.NICOLAU, G.BALMUS, N.CAJAL. Experimental transformation of the herpes recidivans virus into herpes simplex virus. Giornale di Malattie Infettive e Parassit. 1957, 9.

With a view to transforming the herpes recidivans virus into a herpes simplex virus, by adaptation of the reci-

divans virus to the rabbit brain, experiments were carried out with 2 virus strains from 2 patients with arhythmic herpes recidivans. The virulent vesicular fluid, collected from one of these patients, was inoculated by scarification on the skin of 4 persons, 2 of which presented positive results with attacks of herpes recidivans. The same virulent fluid was inoculated at the same time on the cornea of rabbits.

The brain of one of these rabbits, which died of herpes encephalitis, formed the starting point of 6 serial cerebral passages on rabbits.

The brain of the 6th passage was used for dermal inoculation to 4 persons, 2 of which presented positive results: eruption of herpes simplex.

Another similar experiment with vesicular fluid from another case of herpes recidivans yielded identical results, demonstrating that, by repeated passages on rabbit brain, the herpes recidivans virus is transformed into a herpes simplex virus.

234. R.PORTOCALA, N.CAJAL, E.LISSIEVICI. Hyperglycemia in experimental herpes. The National Congress of Med.Sciences, Bucharest, Sect.Neurol.,endocrinol., 1957, 62.

The influence of experimental herpes virus infection on the glycemia curve is studied in rabbits, after their inoculation by cerebral and corneal route. From the data obtained, it results that the rabbits inoculated with herpes virus exhibit an increase of glycemia, which yields maximum values in the pre-lethal period.

These experiments show therefore that introduction of the herpes virus into the organism of the rabbit by central or peripheral inoculation, gives rise to a localization of the germs also in the glycoregulator centers, where they stimulate or even damage the neuron with subsequent appearance of hyperglycemia. These lesions are irreversible.

in the lethal cases and reversible in the non-lethal auto-sterilized cases.

An analogy is drawn between the aspects obtained in experimental herpes infection in rabbits and those of clinical human diabetes; the possible herpes origin of this disease is discussed.

235. R.PORTOCALA, V.VELICICOV, Y.COPELOVICI. Cyto-chemical investigations in experimental herpes: (Desoxy-ribonucleic acid.) St.cerc.inframicrobiol.,microbiol.,parazitol., 1957, 8, 2, 149.

The study starts from the premise that multiplication of the herpes virus requires part of the nucleoprotein and determines stimulation of desoxyribonucleic acid synthesis. Experiments were carried out on rabbits inoculated by intracerebral route with the herpes virus. The brain sections obtained were stained by the Mann and Feulgen method.

During the first stages of the infection, infinitesimal amounts of desoxyribonucleic acid are revealed within the nuclear virus colonies. As the cytologic changes become more accentuated, nucleic acid accumulates in the virus colony to the detriment of the remaining chromatin. The amount of desoxyribonucleic acid increases within the inclusions that appear in the midst of the virus colony. This may be due, on the one hand, to impairment of normal cellular metabolism, that tends towards a stimulation of nucleic acid synthesis and, on the other hand, to uptake of residual chromatin substances during inclusiogenesis. The results obtained make it possible to establish an analogy between the mechanism of stimulation of desoxyribonucleic acid synthesis in the course of the phenomenon of bacteriophagia and the phenomenon determined by penetration and multiplication of the herpes virus in the neurons of the experimentally infected rabbit.

236. R.PORTOCALA, V.BOERU, R.CAPRARU. Investigations on hyperglycemia in experimental herpes.(Induced hyper- and hypoglycemia.) St.cerc.inframicrobiol.,microbiol.,parazitol., 1957, 8,3, 341.

A study was carried out on the evolution of induced hyper- and hypoglycemia in the course of experimental hyperglycemia in rabbits, caused by intracerebral inoculation of the herpes virus. Induced hyperglycemia was obtained by oral administration of glucose, hypoglycemia by subcutaneous injection of insulin. Evolution of glycemia was studied with the aid of the Hagedorn-Jensen microreaction. Under these conditions, the curves obtained in the animals which showed an accentuated hyperglycemia following herpes infection differed from the curves obtained in the control animals. The reactivity of the experimentally infected animals differs to a greater extent from that of the control animals, the more accentuated is the herpes glycemia. The aspect of the curves pleads in favour of an approach between the response of the herpes-inoculated rabbit and that of persons with hypoglycemia, submitted to the tests of induced hyper- and hypoglycemia.

237. I.SAMUEL. Electrophoretic modifications in the sera of rabbits experimentally infected with the herpes virus. Comunicările Acad.R.P.R. Sect.St.Med. 1958, 8, 11, 1221.

The results obtained in electrophoresis of the sera of 14 rabbits experimentally inoculated with the herpes virus, the Bruxelles strain (5 on the scarified cornea and 9 by cerebral route) are reported.

The electrophoretic determinations were done with an IK.30 apparatus. The curves were interpreted according to the method of P.Cazal and G.Carli, obtaining gradients of the Tisselius type.

In the animals inoculated on the scarified cornea, a decrease is observed in the albumin-globulin ratio, reflected by a marked increase of betaglobulins and a constant decrease of albumin, together with slight modifications in the proportion of alpha and gamma globulins, which as a rule remain within initial limits.

In the animals inoculated by cerebral route, similar modifications are observed, but of lower intensity. In this group, the gamma globulins have at the beginning a marked tendency to decrease and then begin to increase slightly.

238. I.ADERCA, M.IANCONESCU. Researches on the herpes virus in human amniotic and embryo tissue cultures. Report read at the Second Congress of Hungarian Microbiologists, Budapest, Sept.22-26, 1959.

A brief summary of the data obtained and published in our country in previous works on the herpes virus in cell cultures.

239. M.CEPLEANU, N.CAJAL. Research on the transmission of herpes to the golden hamster (Cricetus auratus.) St.cerc.inframicrobiol., 1959, 10, 3, 349.

In two experiments carried out on 51 hamsters and 8 rabbits, with 2 strains of herpes virus (P 5433 and Bruxelles), the golden hamster was demonstrated to be an animal species sensitive to experimental infection with the herpes virus.

The cerebral and intranasal routes are very sensitive, whereas cutaneous, subcutaneous, intramuscular and intraperitoneal inoculation are ineffective.

Experimental herpes infection of the hamster is reflected morpho-pathologically by a typical meningo-ence-

phalitis, constantly accompanied in nasal inoculations by broncho-pneumonia of the interstitial type.

240. G.DANESCU-POPESCU, N.CAJAL. Evolution of experimental herpes in cortisone treated rabbits. St.cerc. inframicrobiol., 1959, 10, 1, 71.

Experimentation with strain 5433 of the herpes virus on cortisone treated rabbits at various moments, showed that : experimental herpes infection in this animal species is greatly aggravated under the action of cortisone acetate.

The influence of the suprarenal hormone is more strongly revealed when the animal has been infected by corneal route.

The microscopic examination showed in the cortisone treated animals, in comparison with the controls, diminution of the infiltrative reaction, an accentuation of the congestive reaction and a marked development of virus colonies, with decrease in the number of characteristic inclusions.

241. M.IANCONESCU, I.ADERCA. The herpes virus in cell cultures. III.- Cellular lesions produced by the herpes virus on human embryo and amniotic cell cultures. St.cerc.inframicrobiol., 1959, 10, 4, 487.

The cytopathogenic effect produced by the herpes virus in human embryo and amniotic cell cultures, presents aspects similar to those of the lesions produced by this virus in the organism.

The aspect of the cytopathogenic effect is characteristic enough to permit a swift and presumptive diagnosis of herpes virus, to be confirmed by seroneutralization.

Dissemination of the herpes virus takes place both directly from cell to cell and by spread through the culture medium.

242. R.PORTOCALA, V.VELICICOV, Y.COPELOVICI. On the evolution of intranuclear desoxyribonucleic acid in the course of experimental herpes of the brain stem. Rev.Sci.Med., 1959, 4, 100.

Experimentation was started from the premise that multiplication of the herpes virus may be assumed to require part of the nucleoprotein in order to determine stimulation desoxyribonucleic acid synthesis. Investigations were carried out in rabbits inoculated by intracerebral route with herpes virus. The encephalon sections obtained were stained by the Mann and Feulgen method.

In the first stages of infection, infinitesimal amounts of desoxyribonucleic acid were found in the nuclear virus colonies. As the cytologic alterations became more accentuated, nucleic acid accumulates in the viral colonies to the detriment of chromatin remains. Desoxyribonucleic acid amounts increase within the inclusions that appear in the virus colonies. This may be due, on the one hand, to alteration of normal cellular metabolism, which tends towards stimulation of nucleic acid synthesis, and on the other, to a taking up of chromatin residues in the course of inclusionogenesis.

Herpes.

243. I.ADERCA, M.IANCONESCU. Investigations on herpes virus in human amniotic and embryo cell cultures. Microbiol., parazitol., epidemiol. 1960, 2, 155.

The susceptibility of human fibroblast cultures, obtained by trypsinization of 1 to 3 months old human embryos, was studied in view of isolating the herpes virus directly from the patient. Six strains were isolated from 6 cases presenting typical herpes eruptions and 7 strains from pathologic products obtained from cases of ulcerous stomatitis, non-diphtheric croup, measles and encephalomyelitis. The advantages of this method as compared to other methods for

the isolation of herpes virus are shown.

Morphologic study of the herpes virus infected cells showed the presence of characteristic lesions, similar to those in the animal or human organism. These lesions and their evolution, described in detail, explain the spread of the virus in the organism and cell cultures.

244. N.CAJAL, HUNG TAO, V.IONESCU, G.MARINESCU, S.MATEESCU.
Electrocardiographic alterations in rabbits
with experimental herpes. Stud.cerc.inframicro-
 biol., 1960, 11, 2, 219.

Electrocardiographic examination of rabbits experimentally infected with herpes virus showed morpho-functional alterations at the level of the heart.

The low intensity of the myocardial anatomo-pathologic lesions and the impossibility of isolating the herpes virus at this level, pleads for a central nervous origin of the cardiac alterations occurring in the course of experimental infection.

In view of these results it is assumed that the herpes virus might play a part in the etiopathogeny of certain cardiac functional disturbances encountered in the human clinic.

245. I.ADERCA, M.IANCONESCU, A.BIRCA. The herpes virus in
cell cultures. I.-Isolation of herpes virus in
human embryo cell cultures. Stud.cerc.infra-
 microbiol., 1960, 11, 2, 243.

The sensitivity of human embryo cell cultures obtained by trypsinization of whole embryos is studied in view of isolating the herpes virus directly from patients. From the material collected from 13 cases of typical herpes eruption, 13 virus strains were isolated and identified by

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seroneutralization and the production of keratitis on scarified cornea of a rabbit. Another 7 herpes virus strains were isolated from products obtained from ulcerous stomatitis, non-diphtheric croup, measles and encephalomyelitis cases. The advantages of this method over other methods for the isolation of herpes virus are discussed.

246. M.IANCONESCU. Herpes virus in cell cultures. II.- The incidence of antiherpes antibodies, studied by the seroneutralization reaction, in tissue cultures. Stud.cerc.inframicrobiol. 1960, 11, 2, 249.

The incidence of antiherpes antibodies is investigated by means of the seroneutralization test in cell cultures. It is shown that the antibodies appear early already in the second year of life and attain a proportion that ranges from 60 to 90 per cent. The value of serum antibodies in antiherpes immunity is discussed.

247. R.PORTOCALA, N.CAJAL. The presence of Negri bodies in retina neurons in natural rabies due to street virus. Bul.Stint.Acad.R.P.R.Sect.St. Med., 1949, 1, 10, 891.

The rabies street virus in its centrifugal dissemination, gives rise to Negri bodies in the ganglionic neurons of the retina. These formations could not be found in the corneae examined, due probably to the small amount of germs that reach, by septineuritic route, a medium so little favourable to the development of the rabies virus.

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248. N.CONSTANTINESCU. New data on the prophylaxis of rabies.
Rev.St.Med., 1950, 11, 819.

General report on the problem of specific and non-specific prophylaxis of rabies in man and animals.

249. N.CONSTANTINESCU, A.TOMA, C.DRAGOMIR. The process of Negrigenesis and alterations of the neuron in rabies. An.Acad.R.P.R. Sect.St.Med., 1950, 2, 15, 345.

The morphopathologic study of cellular alterations and the inclusiogenetic process showed that no relations exist between the frequency of the Babes-Negri bodies and the intensity of these degenerative processes in the neurons. The latter process involves not only the nucleus, but also the cytoplasm of the neuron and its frequency seems to be conditioned by the duration of the paralytic phase of rabies. The specific nature of the cellular alterations were confirmed in the spermophil, an animal species whose neurons react by a massive inclusiogenetic process, even in rabies with the fixed virus.

250. ACAD.ST.S.NICOLAU, MIRCEA V.BABES. "The Babes-Negri bodies" and not "the Negri bodies". Rumanian science is first in the discovery of rabies inclusions. Bul.Stiint.Acad.R.P.R.Sect.St.Med., 1950, 2, 9, 1075.

As far back as 1893, in the first edition of his "Text-book on the therapy of infectious diseases", published by Professor Penzolt in the Fisher Printing-House in Jena, Victor Babes describes rabies inclusions in the cytoplasm of the nervous cells in the form of "small vacuoles, containing a hyalin corpuscle", 10 years before Negri.

It is thus demonstrated that Babeş was the first author to give an accurate interpretation of the rabies inclusions.

It is therefore requested that these formations should in future be named the "Babeş-Negri bodies" and not "Negri bodies", a designation which does not correspond to the scientific truth.

251. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, C.DRAGOMIR, E.PUIU
Anti rabies vaccination of dogs with the fixed virus
attenuated by methylic alcohol and emulsioned
in mineral oil. An.Acad.R.P.R. Sect.St.Med.,
 1950, 2, 18, 461.

Although the oleate vaccine prepared with the fixed rabies virus attenuated by 50 per cent alcohol is pathogenic when inoculated by cerebral route, by peritoneal or muscular route it has no effect. The immunity developed is permanent; all the vaccinated rabbits and dogs were immune to the test-infection with the street virus inoculated by muscular route (all the control rabbits and 6 of the 7 control dogs infected by this route contracted rabies), but 2 of the 5 dogs and 3 of the 6 rats resisted to the cerebral inoculation, which killed all the control animals.

252. ACAD ST.S.NICOLAU, N.CONSTANTINESCU, C.DRAGOMIR, E.PUIU.
Comparative study of septineuritis and "closed
rabies" in vaccinated and non-vaccinated rabid
animals and men. An.Acad.R.P.R.Sect.St.Med.1950,
 2, 20, 617.

The investigations carried out on 7 human cases of rabies and 54 animals, experimentally infected with the street virus, showed that rabies septineuritis, manifested by the presence of the virus in the peripheral nerves, is negative

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in the vaccinated persons. Therefore, the street virus is present in the encephalon, but does not spread centrifugally through the intermediacy of the nerves to contaminate the salivary glands.

In vaccinated cases, clinically apparent rabies becomes a non-transmissible infection, the saliva of the man or animal is no more virulent, constituting therefore an actual "closed" rabies.

Negative septineuritis and consecutive closed rabies was revealed in 86% of the vaccinated animals and men, which however died of rabies, as compared to 20% reported in non-vaccinated cases of rabies.

The phenomenon is explained by tissular immunity of the peripheral nervous system, acquired by vaccination and prevention of centrifugal spread of the street virus from neuraxon to the peripheral nervous system resulting in negative septineuritis and closed rabies, non-transmissible by the saliva.

253. ACAD. ST.S.NICOLAU, N.CONSTANTINESCU, C.DRAGOMIR.

Rabies with a long incubation in vaccinated persons. St.cerc.inframicrobiol., 1950, 1, 1-2, 17.

Two cases of human rabies are described, correctly treated with anti-rabies vaccine in which however the disease developed after a long period of incubation, of respectively 158 and 738 days. Experimental data showed that failure of the anti-rabies treatment was not due either to the existence of an antigenic variant - different from the street virus - or to a "reinforced" virus strain.

254. ACAD. ST. S. NICOLAU, N. CONSTANTINESCU, CONSTANTA
 DRAGOMIR. Study of the histologic lesions in
 the brain of experimental animals in inapparent
 rabies infection. St. cerc. inframicrobiol., 1950,
 1, 1, 223.

Experimental investigations and histo-pathologic examinations, made evident the existence of an "inapparent rabies infection". Although rabies symptoms are absent and the animals infected with sub-rabigenic doses survived, this inapparent infection exists even after 3-4 months, and oxyphil degenerescence lesions of the encephalic neurons can be observed, infinitely more intense than in lethal rabies in which the inflammatory process is predominant, due to the short evolution of the disease.

The fixed or street rabies virus is in latent conflict with the neuron, determining the oxyphil degenerescence reaction, compatible with the apparent state of health.

The cellular alterations, observed in inapparent rabies infection, explains the state of cerebral tissular immunity discovered by Nicolau and other authors in rabies.

255. P. STROESCU. The presence of rabies inclusions in the
 carotid glomus in man and animals that died
 of rabies. St. cerc. inframicrobiol., microbiol.,
 parazitol., 1951, 2, 1-4, 117.

The histopathologic investigations carried out on products obtained from human or animal cases which died following rabies with the street virus, showed the following in the intercarotid glomus :

Rabies inclusions are revealed in the cytoplasm of the nervous ganglionic cells, in the thickness of the nervous periglandular plexus or in the cells that constitute the sympathetic microganglia.

These formations are likewise to be found in the rare ganglionic cells encountered within the inter-carotid gland and interglomerular plexus.

In the glandular cells proper, the rabies virus could be detected in the form of inclusions in a single human case.

In the rabies infection, the inter-carotid gland cells are in a state of hyperfunction, either due to the presence of the virus, or to incitation of the infected afferent nerves.

256. N.CAJAL, S.MATEESCU. Intranuclear Babes-Negri bodies.
St.cerc.inframicrobiol.;microbiol.;parazitol.;
1952, 3, 3-4, 200.

Experimentation with a street rabies virus strain with long incubation (21 - 23 days by intracerebral route and 47 - 53 days by muscular route), showed in 3 rabbits, besides numerous cytoplasmic inclusions, the presence of few inclusions situated in the nucleus of certain neurons and of certain glial cells. There were one, two or three inclusions in one nucleus, measuring approximately 1-3 μ in size, with a more or less homogenous aspect and surrounded by a characteristic halo. The nuclear inclusions, stained by the Mann method, appeared - similar to the cytoplasmic inclusions - in various shades from blue to red.

On the basis of these observations, it is concluded that rabies inclusions can no more be classed in the "cyto-oykon" group, but in the "cyto-kario-oykon" group, cytoplasmic inclusions being prevalent.

257. ACAD.ST.S.NICOLAU, N.M.CONSTANTINESCU, A.TOMA, I.ADERCA, E.DUCA, M.DUCA. Experimental rabies infection with the "neurotropic" fixed virus. St.cerc.inframicrobiol.,microbiol.,parazitol.,1952, 3, 34, 47.

Rabigenous activity following peripheral inoculation of a fixed rabies virus strain, modified by adaptation to the brain of the ground squirrel (*Citellus citellus*) and of the rat is studied. This strain is extremely virulent and becomes exceptionally aggressive, causing rabies paralysis in 20 per cent of the rabbits and 42 per cent of the guinea pigs inoculated by subcutaneous route; in 100 per cent of the rats, 75 per cent of the rabbits and 37 per cent of the dogs inoculated by intraperitoneal route; in 100 per cent of the rats, 50-60 per cent of the rabbits inoculated by intramuscular route and finally 70 per cent of the guinea pigs and 57 per cent of the rats inoculated by intradermal route.

258. P.STROESCU. Researches on the "Babeş-Koch" formations in street rabies. St.cerc.inframicrobiol.,microbiol.,parazitol., 1952, 3, 1-2, 89.

Experimental and histologic investigations have shown that the granular formations described by Babeş in the nervous cells of animals that died of street rabies, represent a histologic reality. They appear under 3 aspects : pulverulent formations, close to the size of the virus, discovered by Babeş and later by Remlinger by means of the ultrafiltration method; slightly acidophil corpuscular formations containing 1-5 small granulations, more resistant to argentic decoloration than the corpuscular mass and formations with arborescent aspects, which are extremely argentophil. The granular and corpuscular formations cannot be identified with the live virus itself, but represent evolutive stages in the formation of the Babeş-Negri bodies. These formations are

numerous in the cells of the animals infected with street virus from and adapted to another species; their frequency decreases in the course of adaptation on the same species.

These formations represent the morphologic expression of the degree of cellular resistance to the action of the rabies virus.

259. N.CAJAL, S.MATEESCU, EL.LISSIEWICI, M.CEPLEANU. The evolution of rabies due to the street rabies virus in rabbits submitted to the action of certain isolated or associated stimulents (heat - milk). St.cerc.inframicrobiol.,microbiol.,parazitol., 1953, 4, 1-2, 79.

Investigations were carried out in 26 rabbits on the reaction of the organism to the street rabies virus after an injection with milk or after thermal stimulation of the skin, as well as after association of the two stimulents.

The results of the experiments showed changes in the period of incubation. As compared to the controls who died after an average period of 14 days, the group in which stimulents were applied separately died after a period of 21-23 days and in the group in which the two stimulents were associated (thermal stimulation + milk injection), this period was of 47 days.

The authors conclude that when the two stimulents are applied separately, the response of the cortex is manifested by an increase in the defence reaction, which does not exceed however a given threshold.

When the two stimulents are applied simultaneously, according to the technique of elaboration of conditioned reflexes, the defence reflex is much stronger. This is due on the one hand to summation of the stimulations and defence responses of the cortex and, on the other hand, to the mechanism of negative induction of the previously fixed dynamic stereotype.

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260. R.DINU, C.IACOB, E.NASTAC. Resistance to rabies in rats with experimental reflex epilepsy. Bul.Stiint. Acad.R.P.R. Sect.St.Med., 1953, 5, 1, 97.

The street rabies virus was inoculated to a group of 33 rats by peripheral route. Nine of these rats had reflex epilepsy fits induced by auditory stimulations, 7 presented only motor excitation, 7 were submitted to electroshock and the other 10 served as controls. None of the rats with reflex epileptic fits had the disease 32 days after the inoculation. Of the other 24 rats 66% showed rabies paralysis between the 14-26th days.

The authors conclude that reflex epilepsy increases the natural non-specific resistance of rats to the rabies virus.

261. ACAD.ST.S.NICOLAU, I.ADERCA, G.DANIELESCU, P.STROESCU. Study of the evolution of rabies with the street virus in rats submitted to a state of conditioned sleep. Bul.Stiint.Acad.R.P.R. Sect.St.Med., 1953, 5, 1, 9.

In order to remove the toxic substrate that exists in narcosis-induced sleep, a reflex conditioned sleep was induced in a series of rats, by means of chloral hydrate and strong light. After establishing the conditioned reflex, the rats were inoculated peripherally with the street rabies virus and divided into 3 groups.

The results obtained showed that in the group in which extinction of the reflex had occurred, 3/5 of the animals died the same as in the group of control animals; in the group in which saline injections replaced the chloral hydrate injections, 2/5 of the animals died of rabies and in the group in which chloral hydrate injections alternated with saline injections 1/4 of the animals died of rabies.

These data demonstrate the role of the cerebral

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cortex in the reactivity of the organism and the possibility of ~~modifying the~~ evolution of infectious diseases by inhibition of cortical reactivity.

262. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, M.DUCA. Investigations on the effect of induced sleep in experimental rabies. Bul.Stiint, Acad.R.P.R. Sect.St.Med., 1953, 5, 2, 229.

A study was carried out in a series of experiments on rats on the influence of prolonged sleep on the evolution of experimental rabies.

The results obtained showed that sleep induced by medinal has a net influence on the evolution of rabies in rats, prolonging the period of incubation from 11 days in the controls to 14.4 days and even permitting survival of one of the 10 animals inoculated.

The effect of the state of inhibition is more obvious in the ~~cases~~ in which sleep preceeds the cerebral infection.

263. P.STROESCU, I.MIRZA. Modification of higher nervous activity in mice inoculated with the anti-rabies vaccine. St.cerc.inframicrobiol, microbiol., parazitol.; 1953, 4, 3-4, 367.

Investigations were carried out on modifications of the higher nervous activity in white mice inoculated with the anti-rabies vaccine, in which conditioned alimentary-motor reflexes had been previously elicited. After inoculation, modification of the higher nervous activity takes place in the first 24-48 hours. These modifications reflect the process of supraliminary inhibition manifested by a prolongation of latency, inhibition of positive-conditioned reflexes and enhancing of internal inhibition. Certain non-conditioned

reflexes (defence and orientation reflexes) are more accentuated, which indicates a certain liberation of the subcortical regions from under the restricting influence of the cortex. Modifications of the conditioned reflex activity lasts on the mean 16-20 days, after which the reflexes come back to normal.

254. N.CONSTANTINESCU, A.TOMA, R.DINU. Experimental investigations on the so-called "natural" immunity of dogs in rabies infection. St.cerc.inframicrobiol., microbiol., parazitol., 1954, 5, 3-4, 269.

In 5% of the 150 dogs examined, which were refractory to repeated inoculations of the rabies virus by cerebral route, no serum rabies antibodies were found, not even in low titers, and the nervous tissue did not kill the virus in vitro. Since it was possible to immunize the guinea pig by repeated administration of subrabies street virus doses, the "natural" immunity of dogs was interpreted as revealing in reality an actively acquired immunity by contact with the street virus in areas with enzootic rabies.

265. N.CONSTANTINESCU, C.DRAGOMIR, E.DUCA, M.DUCA, GR.TEODOROVICI. Strains of rabies virus isolated in Moldavia. Pathogenic activity, fixation capacity and antigenic qualities. St.cerc.inframicrobiol., microbiol., parazitol., 1954, 5, 3-4, 291.

Of the 43 rabies street virus strains - 17 isolated from animals and 26 from man, - with or without anti-rabies treatment, none, not even those isolated from human cases considered as due to "unsuccessful treatment" behaved as "reinforced" virus strains. The cause of insuccess in the persons correctly treated with phenol treated vaccine "killed"

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by heating 72 hours at 37° C was ascribed to the method of vaccination or to individual incapacity of immunogenic reactivity of the organism. The first of these two factors led to new investigations, following which the classical Fermi vaccine was introduced in our country.

266. MIRZA, E. NASTAC, C. IACOB. Influence of the street rabies virus on higher nervous activity in white rats. St. cerc. inframicrobiol., microbiol., parazitol., 1954, 5, 3-4, 359.

Motor-alimentary conditioned reflexes were elaborated in rats, after which the animals were inoculated with the street rabies virus. In the first 24-48 hours after inoculation, evident modifications of the conditioned reflex activity appeared, which were not observed in the controls inoculated with normal brain. This demonstrates that incubation in rabies is much shorter than was thought, and that the cerebral cortex reacts before any other organ in this disease. Modification of the reflexes points to an early establishment of supraliminary inhibition processes in cortical activity; increase of the latency period, inhibition of the motor-conditioned reflex, prolongation of feeding time, apparent improvement of differentiation-inhibition. The animals in which these modifications appeared suddenly died, whereas those in which they appeared slowly survived inoculation.

267. P. STROESCU, R. PORTOCALA, I. ADERCA, G. DANIELESCU. Researches on septineuritis in "closed rabies". St. cerc. inframicrobiol., microbiol., parazitol., 1954, 5, 3-4, 409.

An experimental histologic study was carried out on septineuritis in "closed rabies". They investigated at the same time the virulence and lesions caused by the rabies

virus inoculated to animals which had been previously incompletely immunized against rabies.

The experiments demonstrated that the rabies virus has an initial affinity for the vegetative nervous system, both peripheral and central, so that the parotid gland, the sympathetic and parasympathetic nerves are often more virulent than the peripheral sensitive motor nerves or even the neuraxon. The anatomic-pathologic examination shows in the peripheral vegetative system intense rabies inflammatory processes and the presence of a great number of Babeş-Negri bodies. The inflammatory lesions in the neuraxon are to be found at the level of the vegetative centers, around the 3rd ventricle, the bulbus or spinal cord. In the spinal ganglia, inflammatory processes of medium intensity and rabic inclusions are revealed. No apparent lesions can be found in the sensitive-motor nerves.

In view of the well known role of the vegetative nervous system in the elaboration of immunity and defence functions of the organism, the difficulty of establishing immunity in rabies can be explained both in the course of the declared disease and after anti-rabies vaccination, by the fact that this system is the most vulnerable to the attack of the rabies virus.

268. N.CAJAL, S.MATEESCU. Rapid diagnosis of rabies with the contrast phase microscope. St.cerc.inframicrobiol., microbiol.,parazit., 1955, 6, 1-2, 35.
Gior.di malattie infettive e parassit., 1957, 2.

Since the problem of a rapid diagnosis of rabies is of paramount importance, particularly with a view to establishing the beginning of the anti-rabies treatment and since until to-day the methods proposed have, besides advantages, many debatable aspects, the authors proposed to find a swifter technique of diagnosis. To this end, they centered upon the method of contrast phase microscopy, which permits

examination of unstained preparations. The results obtained were excellent; the interval of time required is extremely short: from the moment the fragment of neuraxon from the suspect animal is collected and up to its examination at the microscope, not more than 15 minutes are necessary. Hot fixation is performed in a 10% formol or Dubosq-Brasil-Bouin mixture and sectioning is done at the microtome, cutting 20 - 50 μ thick preparations from the frozen products. The slides are then rapidly passed through absolute alcohol and toluol and the cover slide is fixed with Canada balsam. The sections thus prepared are examined under the contrast phase microscope with an immersion objective, after having previously identified with a small objective the layers of Ammon's horn, particularly the central pyramidal layer in which the Babeş-Negri inclusions are to be found in great numbers. Identification of the Babeş-Negri inclusions is very easy, even for an unexperimented eye and their presence confirms the diagnosis of rabies.

269. N.CONSTANTINESCU, M.DUCA, E.DUCA, A.CHEPTEA. Healed or autosterilized experimental paralytic rabies in partially immunized animals. St.cerc.infra-microbiol.,microbiol.,parazitol.,1955, 6, 1-2, 9.

In mice and rats vaccinated against rabies with the Fermi vaccine or with the "katadinized" vaccine (M.Duca and E.Duca), the paralytic period of the disease was prolonged up to 9-16 days instead of 1-2 days, as noted in the control animals. This prolongation of the clinical phenomena allows the partially immunized organism to defend itself against the infectious rabies virus, autosterilization of the neuraxon takes place and the animal sometimes survives ("healed paralytic rabies").

270. N.CONSTANTINESCU, A.STIRBU, A.CHEPTEA, C.TAINDEL.

The influence of the treatment on antirabies vaccination before and after infection.

St.cerc.inframicrobiol.,microbiol.,parazitol., 1955, 6, 3-4, 375.

In preventive vaccination, applied to mice and rats, according to the treatment scheme with small doses of Fermi vaccine (6 doses at 2 days interval, total dose : 0.37 - 0.40 g nervous substance per kg body weight) a more accentuated state of immunity was obtained than with the intensive treatment (21 daily doses, total dose 10.5 g per kg body weight).

The intensive treatment, does not completely inhibit the immuno-genetic process and seems useless and definitely unfavourable in antirabies vaccination.

271. G.DANIELESCU, L.MIRZA, Modifications of the higher nervous activity in white mice following anti-rabies vaccination and subsequent inoculation of the street rabies virus. St.cerc.inframicrobiol., microbiol.,parazitol., 1955, 6, 1-2, 55.

Investigations were carried out on changes of the higher nervous activity in mice, in whom alimentary-motor conditioned reflexes had been elicited and who were subsequently vaccinated against rabies and then inoculated with the street rabies virus. Modifications of the higher nervous activity that appear after vaccination are very reduced in comparison with those that appear after inoculation with the non-attenuated live virus. In the first 48 hours after inoculation, a state of supralimnary inhibition appears in the conditioned reflex activity, manifested by prolongation of latency and duration of the run for food after applying the positive conditioned stimulus, prolongation of the necessary time for ingestion of food and apparent improvement of differentiation-inhibition. None of these modifications appeared in the controls.

272. L.MIRZA-EMINET, J.SAMUEL, E.NASTAC, C.IACOB. Conditioned reflex activity in dogs during vaccination against and subsequent inoculation with the street rabies. St.cerc.inframicrobiol.,microbiol.,parazitol.,1955, 6, 1-2, 65.

Alimentary salivary conditioned reflexes were elaborated in 4 dogs, after which the animals were vaccinated with an anti-rabies vaccine and 34 days later inoculated with the street rabies virus. Modification of the conditioned reflex activity, of the supraliminary inhibition type, appeared 13-22 days later. These modifications appear at the moment of maximum resistance, checked by biologic tests. They appear more swiftly but more superficially in the choleric type, more slowly but profoundly in the phlegmatic type. In the first 2 days after inoculation, an exaggeration of the excitation process is observed, followed by a process of supraliminary inhibition: prolonged latency, inhibition of the positive conditioned reflex and non-conditioned reflex, alimentary reflex and apparent improvement of differentiation-inhibition.

Disturbances of conditioned reflex activity are more profound in the choleric type, in which they were more superficial after vaccination, and more superficial in the phlegmatic type, in which they were more profound.

273. N.CAJAL, G.DANESCU-POPESCU. Researches on antirabies immunization in rabbits with modified reactivity of the central nervous system. St.cerc.inframicrobiol.,microbiol.,parazitol.,1956, 7, 3, 311; - The National Congress of Medical Sciences, Comunicările Sect. Neurol.,endocrinol., București 1957, 27.

In order to study antirabies immunity in animals whose nervous reactivity was modified by certain drugs in the

course of the specific vaccination process, benzedrine was used as a stimulating substance and medinal as an inhibiting substance. Vaccination was obtained with a phenol treated fixed virus vaccine, prepared according to the Fermi method.

Twenty-one days after injection of the last dose of vaccine, the rabbits received a challenge dose by intramuscular route, with the street rabies virus.

The experiments carried out showed that the antirabies vaccination of rabbits, performed coincident with administration of benzedrine, establishes a higher specific state of resistance than in the controls.

In opposition, medinal administered at the same time as the vaccination, is followed by a lower degree of immunization in comparison with the controls.

These differences may be noted only when a vaccine with an attenuated virus is used and never with vaccines in which the virus has been totally inactivated.

274. N.CONSTANTINESCU, A.STIRBU, C.TAINDEL, A.CHEPTEA, I.STOIAN. Comparative study of the preventive immunogenic value of phenol, attenuated and killed antirabies vaccines. Arh.rom.de epidemiol.și microbiol., St.și Cerc. Edit.Med., București, 1956, 353.

Comparative study of the immunizing activity in mice of 4 attenuated or killed vaccines yielded the following results, regarding the proportion of animals protected against challenge infection by cerebral route, with the fixed virus (F) or the street virus (S) :

Fermi vaccine =	29% (F);	38% (F);	29% (F);	52% (S).
Phillipps vaccine =	21% (F);	16% (F);	30% (F);	59% (S).

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Vaccine killed 72
hours at 37° C 11% (F); 0 (F); 0 (F); 25% (S).

Vaccine killed 2
hours at 37° C - - - 32% (S).

Controls 0 (F); 0 (F); 0 (F); 0 (S).

275. N.CONSTANTINESCU, A.STIRBU, A.CHEPTEA, C.TAINDEL.

Study on the comparative protective activity of the antirabies serum and of phenol treated vaccines in experimental rabies. St.cerc.inframicrobiol.,microbiol.,parazitol.,1956, 7, 3-4, 423. Giornale Malattie infettive e parassit., 1957, 2, 231.

In experiments on 1,408 animals of various species, it was observed that the antirabies Fermi vaccine does not confer protection when it is administered after intramuscular infection with the street virus. When the immune serum is administered alone or associated to the Fermi vaccine, a net protection is obtained resulting in survival or prolongation of the incubation period and paralytic phase of rabies. These results led to the renewed application in our country of sero-therapy in human rabies.

276. N.CONSTANTINESCU, N.BIRZU. The process of autosterilization in rabies. St.cerc.inframicrobiol.,microbiol.,parazitol.,1957, 8, 4, 517. - The National Congress of Medical Sciences, Comunicările Secți. Neurol.,endocrinol.,București, 1957, 29.

In animals treated preventively with effective antirabies vaccines which died however with the symptoms of

rabies following challenge inoculation with the fixed virus, by cerebral route, partial or total ($LD_{50} = 3$) autosterilization of the neuraxon occurs. Comparatively, in non-vaccinated mice, the titer of the brain is $LD_{50} = 10^{-7.7}$ to $10^{-11.3}$. Some of the vaccinated mice contracted rabies of long duration, followed by recovery.

277. N. CONSTANTINESCU, N. BIRZU, GR. TEODOROVICI, N. STAVRI.
Process of autosterilization in rabies in partially immunized animals. Giornale Malattie infettive e parassit., 1957, 2, 229.

The brain of mice with evident rabies paralysis, that had been previously vaccinated with a low efficacy vaccine (14% of the animals resistant to the challenge inoculation), yielded the same titers as the untreated animals which died of rabies ($LD_{50} = \text{approximately } 10^{-6.5}$). In contrast, in the animals vaccinated with the Fermi vaccine (58% survivals after similar test-infection), autosterilization of the neuraxon almost constantly occurred.

278. ACAD. ST. S. NICOLAU, L. MIRZA-EMINET, N. CAJAL. Investigations on the role of the higher nervous centers in experimental rabies and the process of anti-rabies immunity. Giornale di Malattie infettive e parassit., 1957, 9, 2.

The results obtained in numerous and varied experiments, carried out with a view to studying experimental rabies by means of Pavlov's methods are described (conditioned reflexes, modification of cortical reactivity by chemical and physical agents, etc.)

The data obtained clearly show that both in the case of rabic infection and during the process of antirabic immunization - immunization manifested by a minor disease -

the central nervous system plays an important part. This was demonstrated particularly by means of the Pavlov techniques, which are an excellent means for revealing early modifications of the cortical reactivity caused by infection, modifications that appear long before any detectable clinical symptomatology.

279. ACAD.ST.S.NICOLAU, R.PORTOCALA. Rabies with delayed incubation in vaccinated subjects. Giornale di Malattie infettive e parassit., 1957, 2, 2, 220.
The National Congress of Medical Sciences, Comunicările Sect.Neurol.,endocrinol., 1957, 59.

Investigations were carried out on 3 cases of human rabies with delayed incubation (158 days, 738 days and 6 years) which occurred in inoculated persons. The pathogenicity of the strains isolated on animals is fairly low.

Microscopic examination of the nervous system in the 3 cases showed, besides the usual modifications, typical rabies inclusions in the cytoplasm of the glial cells, white cells and vascular endothelial cells.

These inclusions were likewise discovered in the nuclei of the glial cells in Ammon's horns.

280. R.PORTOCALA, P.STROESCU, N.CAJAL. Histopathologic study of the vegetative nervous system in rabies. Giornale di Malattie infettive e parassit., 1957, 2, 225.

In the course of rabies, due to the street virus, the presence of numerous rabies inclusions were revealed in man and animals in the ganglionic neuron of the retina and in those of the carotid glomus.

In the partially immunized animals, similar inclusions are to be found in the vegetative ganglia. The same

findings are likewise valid for the nervous intra-parotid microganglia. The peripheral vago-sympathetic system of these animals is virulent, which demonstrates that immunity cannot be obtained without integrity of the vegetative system.

It is assumed that the alterations described explain to a certain extent the vegetative and psychic disturbances encountered in rabies.

281. N.CONSTANTINESCU, N.BIRZU. Investigations on the mechanism of autosterilization in rabies. St.cerc.stiinț.Medicină, Acad.R.P.R. Fil.Iași, 1958, 9, 2, 331.

The brain of vaccinated mice completely destroys the rabies virus in situ or inhibits its multiplication in vivo. The inhibitory activity explains by itself the total or partial process of autosterilization of the neuraxon. The brain of mice passively immunized by antirabies serum, does not exhibit this rabicide capacity. Once the virus has penetrated into the neuron, it multiplies - sheltered from the circulating specific antibodies - as if immunity did not exist.

282. N.CONSTANTINESCU, N.BIRZU. Phenomenon of autosterilization and recovery in experimental rabies. Ann.de l'Inst.Pasteur, 1958, 94, 739.

Antirabies vaccination prolongs the period of incubation of rabies caused by challenge cerebral infection. Once rabies has appeared and when the animal is vaccinated preventively, the autosterilization of the neuraxon almost constantly occurs. This process of autosterilization may sometimes lead to "healed paralytic rabies". As a rule, rabies behaves in the partially immunized organism like any autosterilizable and curable neuroviral disease.

283. ST.DRAGANESCU, A.PETRESCU, N.DRAGANESCU. Inclusions of the Babes-Negri type in a case of ascending paralysis not determined etiologically in the clinic. St.cerc.neurel. 1958, 3, 2, 161.

In a case of ascending encephalo-myelo-radiculo-neuritis, considered clinically of a non-determined primary viral origin, with albumino-cytologic dissociation and without antecedents of rabies infection, intracytoplasmic Babes-Negri inclusions were revealed in the cells of the cerebral cortex, the Purkinje and Ammon horn cells, besides the non-characteristic infiltrative processes in the nervous system.

The hypothesis of encephalitis with Dawson inclusions seems very little probable, the virologic diagnosis remaining that of rabies infection with a clinical character unusual in the human infection with the street virus.

284. ACAD.ST.S.NICOLAU, N.DRAGANESCU, CL.NICOLAU, N.I.IO-NESCU. Investigations on a new type of anti-rabies vaccine with silver ions. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 2, 3, 315.

A new method for preparing the vaccine with fixed rabies virus, inactivated with the aid of silver ions is described. This can be obtained by electrical concentration with silver ions and also by mixing the virulent rabies suspension with certain silver salts and particularly with silver nitrate. In a 0.15% solution in distilled water, this salt adequately attenuates the fixed rabies virus. By adding an aqueous suspension of "silvered" virus, to an equal volume of 18/1000 sodium chloride solution, potent antirabies vaccine is obtained, whose immunizing potential is at any rate equivalent to that of other antirabies vaccines prepared by other methods.

285. M.BABES. On the beginnings of Rumanian rabiology.
 St.cerc.inframicrobiol., 1959, 10, 2, 241.

Victor Babeş, the founder of Rumanian rabiology, was the first foreign investigator to be personally initiated by Pasteur in Paris (January 1886) in the details of anti-rabies vaccination in man.

Babeş's research work at the Pasteur Institute immediately suggested to the Rumanian investigator the idea of studying the pathognomonic histopathologic signs of rabies, the mode in which the rabies virus propagates along the nervous pathways, the method of attenuating the virus by heat, trepanation of rabbits with the gimlet instead of the crown-trepan, the swifter transition of the street virus into the fixed virus by the use of guinea pigs, etc.

Rumanian rabiology greatly benefited by these discoveries of Babeş's, already from its beginnings (May 6, 1888.)

286. N.CAJAL, G.DANESCU-POPESCU. The evolution of experimental rabies and antirabies immunity under the action of cortisone. The Second Congress of the Hungarian Microbiologists, Budapest, September 22-26, 1959.

Investigations on hamsters, mice and rabbits, concerning the influence of cortisone on the evolution of rabies with the fixed virus or the street virus and anti-rabies immunity obtained with the Flury virus, or with a vaccine with inactivated fixed "Babeş" virus, led to the following conclusions :

Administration of cortisone at the beginning of the experimental rabies infection increases the sensitivity of the animal to the pathogenic action of the street virus and, to a certain extent, to that of the fixed rabies virus. Thus,

the period of incubation and of survival is reduced, the differences being much more evident in hamsters, which as a rule contract rabies of long duration.

~~Anti~~-rabies immunization in rabbits is more accentuated under the action of cortisone, although the seroneutralizing antibody titer is lower. In this way, the absence of a parallelism between the degree of inframicrobial immunity and serum antibodies is again demonstrated.

287. N.CAJAL, G.DANESCU-POPESCU, Investigations on anti-rabies immunity in rabbits vaccinated with the "Flury" strain under the influence of cortisone. St.cerc.inframicrobiol., 1959, 10, 4, 447.

A study of the degree of immunization induced in rabbits by the avian adapted "Flury" rabies virus under the action of cortisone acetate, and the dynamics of seroneutralizing antibodies, showed that immunogenesis is significantly accentuated under the action of this suprarenal hormone. The influence is more obvious when cortisone is administered 2 days before vaccination and then 2 more days, coincident with the "Flury" vaccine. The degree of immunization is independent of the titer of the serum neutralizing antibodies, which definitely decrease under the action of the corticoid hormone.

288. N.CONSTANTINESCU, N.BIRZU, I.MICU, O.ZAVATE, FL.VASOIU. Process of autosterilization in human rabies. St.cerc.Stiinț., Medicină, Acad.R.P.R. Fil.Iași, 1959, 10, 1, 129.

The same process of autosterilization is observed in human rabies as in animals. The cerebral tissue in non-vaccinated human cases yielded titers of $LD_{50} = 10^{-4.3}$

to $10^{-5.0}$, whereas in vaccinated persons, who however developed rabies, the virulence of the brain only attained $LD_{50} = 10^{-1.3}$ to $10^{-2.5}$. Since the possibility of the intervention of a naturally attenuated strain is excluded, these low titers reflect the process of autosterilization in vaccinated persons.

289. N.CONSTANTINESCU, N.BIRZU. Is not rabies a curable disease ? La Presse Médicale 1959, 67, 9, 331.

Considerations are made on the autosterilized or healed rabies infection in naturally resistant or sensitive animal species, on inapparent infection, rabies septi-neuritis and "closed" rabies. This behaviour of the disease implies the necessity of renouncing - in the case of human rabies in vaccinated persons - to euthanasia by morphine and of adopting an adequate symptomatic therapy, as in the bulbar form of poliomyelitis.

290. N.CONSTANTINESCU, N.BIRZU, I.MICU. Research-work on the mechanism of protective activity of the antirabies serum. St.cerc.inframicrobiol., 1959, 10, 3, 297.

The protective activity of antirabies serum is conditioned by direct contact between the rabicide antibodies and the infectious rabies virus. The virus is neutralized only as long as it has not penetrated into the nervous system; once it has penetrated - the intraneural phase - the action of the serum becomes nil. These results imply that, in human therapy, local serum infiltrations should be done directly in the anatomical region infected, at the same time as general serotherapy.

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291. ACAD.ST.S.NICOLAU, B.FUHRER. Investigations on the presence of the street rabies virus in the blood of experimentally infected rabbits.
Report read at the Festive Scientific Session of the Institute of Inframicrobiology, August 17-18, 1959.

The existence of a period of viremia in experimental rabies in rabbits and guinea pigs was demonstrated.

This period occurs between the 4th and the 7th day after inoculation of a virulent suspension by intramuscular route.

The presence of the rabies virus in the blood of the animal was demonstrated both histologically and biologically.

292. ACAD.ST.S.NICOLAU, L.MIRZA, P.ATHANASIU, AL.PETRESCU.

Is it possible to determine by means of the conditioned reflex method the limit of rabies virus variability in formulated antirabies vaccines?
10, 1957.

The experiment was carried out on 10 groups of 4 rats each, with previously elaborated conditioned reflexes. Six groups were vaccinated with the variously attenuated antirabies vaccine (formulated 0.5/1,000, 1/1,000, 2/1,000, 4/1,000, 6/1,000, 8/1,000) the other groups serving as controls for the reflexes, for the virus and for the 0.5/1,000 and 8/1,000 formulated protein. The experiments showed that no changes occur in the reflexes of the controls for reflexes, of the controls for non-virulent homologous 0.5/1,000 and 8/1,000 formulated protein, and the rats vaccinated with 8/1,000 and 6/1,000 formulated antirabies vaccine (prepared with homologous protein).

The reflexes are however slightly upset in the rats vaccinated with 4/1,000 formolated vaccine and strongly disturbed in rats vaccinated with 2/1,000, 1/1,000 and 0,5/1,000 formolated vaccine, like in the controls for the non-attenuated rabies virus. It is known that potent vaccines in the field of viral diseases contain at the utmost 4/1,000 formol. A vaccine with a higher concentration of formol becomes non-immunizing, non-operative. It may be assumed that a higher concentration of formol denaturates the chemical constitution of the germ and destroys it. The dead virus is inactive against conditioned reflexes, as may be seen from the above experiment. This supports the idea that the method of conditioned reflexes is a good experimental scheme for assessing the degree of viability of a virus contained in a vaccine and its immunogenic potential.

293. ACAD.ST.S.NICOLAU, N.DRAGANESCU, CL.S.NICOLAU, N.I. IONESCU. Investigations on a new type of antirabies vaccine. Report read at the Second Congress of the Hungarian Microbiologists, Budapest, September 22 - 26, 1959.

On the basis of the oligo-dynamic action of heavy metals, an effective antirabies vaccine was prepared for mice and rabbits, with a silver nitrate. A 10% suspension of fixed rabies virus, Babeş strain, in a 0.15% silver nitrate solution, left 24 hours at room temperature in the dark, becomes vaccinating and confers to the white mouse and the rabbit a solid resistance to infection with the fixed virus by cerebral route.

With a view to long-term storage of the vaccine thus prepared, to the drained off supernatant or after centrifugation an equal volume of saline solution is added. In this way, an antirabies vaccine is obtained with an efficacy on mice and rabbits that lasts more than 3 months.

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Comparative investigations on the efficacy of this vaccine and that of the Fermi vaccine have shown its superiority in mice and rabbits. Dialysis 48 hours against distilled water at $+4^{\circ}\text{C}$ of a suspension of fixed rabies virus in 0.15% silver nitrate solution, showed that in the working conditions applied, attenuation of the fixed rabies virus seems to be an irreversible phenomenon.

In order to study the mode of spread and accumulation of this vaccine in the various tissues of the immunized animals, investigations were carried out with Ag^{110} . The vaccine was prepared in a $\text{NO}_3\text{Ag}^{110}$ solution and the radioactivity of various organs was then determined.

The results show that the attenuated virus penetrates into the nervous tissular system, which it immunizes, through the homologous sciatic nerve. The conclusion may therefore be drawn that this vaccine follows the centripetal route of migration characteristic of the live neurotropic viruses.

294. ACAD. ST. S. NICOLAU, N. DRAGANESCU, CL. S. NICOLAU, B. FUHRER, E. GIRD, N. I. IONESCU. Experimental researches on "silvered" antirabies vaccine. Acta Virologica, 1959, 3, 91; Rev. Sci. Med., 1959, 81.

An antirabies vaccine, prepared with the fixed rabies virus attenuated by means of a 0.15 % silver nitrate solution, was demonstrated to be as effective in mice and rabbits as other vaccines prepared with the attenuated virus.

Migration in the organism of the radioactive vaccine prepared with $\text{Ag}^{110}\text{NO}_3$ was studied. Radioactivity of the sciatic nerve in the inoculated thigh was higher than in the 14 other different tissues studied, thus demonstrating the neurotropic affinity of the attenuated virus contained in the vaccine, although the latter was not pathogenic for mice on intracerebral inoculation. The viability of virus particles in effective vaccines and the results supporting the views on tissue immunity in viral infections are then discussed.

295. ACAD.ST.S.NICOLAU, N.DRAGANESCU, N.I.IONESCU, M.
 ANDREESCU. Investigations on the preservation
 of the efficacy of the "silvered" antirabies
 vaccine. Comparative study of the immunogenic
 effect of the "silvered " vaccine and Fermi
 vaccine. St.cerc.inframicrobiol., 1959, 10,
 3, 267.

An antirabies vaccine was prepared with 0.15 per cent silver nitrate solution. Twenty-four hours after preparing the vaccine, a metallo-protein precipitate is formed: silver-cerebral substance of rabbits infected with the "Babeş" fixed rabies virus. By eliminating 24 hours later the supernatant fluid - by simple draining off or by centrifugation, and adding an equivalent amount of saline - an antirabies vaccine is obtained whose efficacy in mice and rabbits lasts more than 3 months, which proves, in contrast with the results obtained in previous experiments, that the factor determining decrease of the protective action of the vaccine is to be found in the supernatant. Chemical determinations showed that 10 ml supernatant contains 0.0016 gm silver or 0.0025 gm silver nitrate.

The infinitesimal amounts of chlorides and NO_3 ions present in the supernatant, denote that the existence of excess silver ions constitutes the factor that determines the loss of the efficacy of the virus with time.

Comparative researches on the efficacy of "silver" vaccine, prepared by eliminating the excess of silver ions after 24 hours and of the Fermi vaccine, showed the superiority of the former. Dilyses during 48 hours against distilled water at $+4^\circ$ of this fixed rabies virus suspension in 0.15 per cent silver nitrate shows, in the experimental conditions of the authors, that attenuation of the fixed virus can be an irreversible phenomenon.

296. ACAD.ST.S.NICOLAU, N.DRAGANESCU, CL.NICOLAU, N.I. IONESCU, B.FUHRER, E.GIRD. Experimental investigations on silver antirabies vaccine. Rev. Sci.Med., 1959, 4, 81.

An efficient antirabies vaccine for mice and rabbits was obtained with silver nitrate in 0.15% concentration.

With the aid of this vaccine, the ascending migration of the virus-vaccine along the sciatic nerve towards the central nervous system, which it immunizes, was demonstrated, by calculation of the infectious activity of the various organs.

297. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, N.BIRZU, O.ZAVATE. Immunity in rabies appraised by the peritoneal neutralization test. St.cerc.inframicrobiol., 1960, 11, 1, 9; Acta Virol.Ung. 1960, 7, 2, 184; Biull.Nauc.inform. 1960, 2, 131.

The correlation between rabies antibodies and the evolution of rabies was investigated, substituting the classical neutralization test by the "peritoneal neutralization" test. To this end, the animals (hamsters, rats and mice) immunized against rabies with the Fermi vaccine and which had finished the series of vaccinating injections 1 to 163 days previously, received by peritoneal route a 10^{-2} suspension of cerebral substance from rabbits infected with the fixed Babeş rabies virus. After 60 to 90 minutes, the peritoneal fluid was sterily collected by puncture and inoculated intracerebrally to 5 mice. The state of immunity was appraised by survival of the animals in the experimental group. The results obtained demonstrate that in comparison with the animals of the control group, that died of rabies encephalitis, "the peritoneal neutralization test" is very precise in showing the state of antirabies immunity and the

decline of immunity, especially in hamsters and rats.

The state of immunity attenuated by long intervals after the end of vaccination, may be reactivated by booster doses. The positive peritoneal neutralization test in the controls is accounted for by immunization of the reticuloendothelial system, following transitory viremia made evident only within the first hours after inoculation of the virus.

298. N.CONSTANTINESCU, N.CAJAL, N.BIRZU, M.CELEANU, O.

ZAVATE. Experimental rabies infection in the Syrian hamster. St.cerc.inframicrobiol.1960, 11, 1, 61; Acta Virol.Ung.1960, 7, 2, 184.

Study of the evolution of experimental rabies infection in the Syrian hamster showed that this animal species is very receptive both to the street and the fixed rabies virus. In contrast to other sensitive animals, the paralytic phase in the hamster is exceptionally long, up to 20 days.

By prolonging the conflict between the virus and the organism, a process of autosterilization develops in a number of animals, similar to that observed in other laboratory animals partially immunized by antirabies vaccination. In this species, the inclusiogenetic process is particularly intense, large and sometimes giant Babes-Negri bodies in 100 per cent of the neurons, with a characteristic internal structure - in street rabies virus; numerous inclusions of variable size, formed of homogenous oxyphil mass, situated in the neurons of Ammon's horn and of the hippocampus in fixed "Babes" virus rabies.

299. C.SURDAN, E.DUMITRIU-CAROL, C.CURE, M.ANGELESCU.

Contributions to the study of post rabies vaccination neuroparalytic complications in the dog.
St.cerc.inframicrobiol.1960, 11, 2, 273.

Clinical investigations and attempts at isolating the rabies virus were done in 20 dogs, presenting neuroparalytic complications following antirabies vaccination. These developed 10 to 40 days after preventive vaccination with the aluminium treated antirabies vaccine (Popovici-Stamatin formula).

The age, breed and sex played no part in the appearance of neuroparalytic complications. Only in the antecedents of 6 dogs had antirabies vaccinations been done.

The sick dogs showed symptoms of radiculitis, meningo-myelitis or meningo-encephalitis, pleiocytosis of the cerebro-spinal fluid, neutrophil granulocytosis (82 per cent), lymphopenia (11 per cent) and slight blood monocytosis (5 per cent).

The evolution of the disease lasted 1 to 15 days. Recovery was obtained in 8 of 20 cases by treatment with cortisone, vitamins and antibiotics.

Anatomopathologic alterations in the dead animals were of the congestive and hemorrhagic type. Histopathologic alterations in the nervous system were manifested by demyelinating infiltrative neuritis and demyelinating meningo-leuko-polio-encephalomyelitis. The demyelinating processes of the neuraxon were in most cases perivascular.

It was not possible to isolate in laboratory animals the vaccinating rabies virus, nor any other virus, although the cerebro-spinal fluid was collected in the course of the disease and nervous tissue suspensions prepared after death of the animals. The conclusion is drawn that the post-rabies vaccination neuroparalytic accidents investigated were of allergic origin.

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300. N.CONSTANTINESCU, N.BIRZU. On the mechanism of the autosterilization process and recovery in rabies. Giorn.Malatt.Infett.Parassit.1960, 12, 9-10, 712.

The brain of mice, treated preventively with the Fermi vaccine, destroys in situ the fixed rabies virus inoculated concomittantly with the challenge cerebral injection or inhibits its multiplication in vivo.

In opposition to the animals with an active immunity, whose autosterilization process - either total or partial - is constantly observed, the brain of mice that have received the rabies antiserum before infection, is totally inactive from the viewpoint of its rabicide or inhibitory potential in vivo.

The autosterilization process of the neuraxon represents the effect of the resistance of the nervous tissue in the sense of Levaditi and Nicolau's conception, on the tissular origin of immunity in neuroviral diseases, a conception recently developed and synthetized by Nicolau.

301. ACAD.ST.S.NICOLAU, N.DRAGANESCU, N.I.IONESCU, V.BOERU, CIEN TIN HUAI. Experimental investigations on rabies vaccine prepared by the action of copper ions. Contributions concerning the transformation of the pathogenic virus into an immunogenic one under the action of copper. St.cerc.infra-microbiol., 1961, 12, 2, 193; Acta Biol.et Med. Germ. 1962, 8, 3, 219.

The authors have shown that just like silver ions, copper ions are apt to transform fixed rabies virus ("Babeş") into an efficacious vaccine. The experiments have demonstrated that a 0.06 per cent copper nitrate solution in physiological saline will attenuate the virus to a sufficient

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extent to prevent its cause the disease while at the same time its immunogenic properties are maintained. The potency of this vaccine decreases in the course of time.

Microchemical analysis of the protein and nuclein constituents of influenza virus transformed into a vaccine by means of copper ions revealed the presence of this metal in both components. However, the presence of traces of amino-acids in the nucleic acid fraction suggests that the metal contents of this fraction might be due to these amino-acids.

Investigations which are under way will show whether the inactivating ion is fixed or not on the nucleic acid of influenza virus transformed into vaccine.

302. N.CAJAL, G.DANESCU-POPESCU. The evolution of experimental rabies and antirabies immunity under the action of cortisone. Rabies, 1961, 1, 2, 77; Acta Virol.Ung. 1960, 7, 2, 185.

A detailed study was carried out on experimental rabies in rabbits, hamsters and mice, produced by the street and fixed rabies virus, under the action of cortisone acetate (5 mg/kg body weight).

The experiments showed that cortisone administered at the beginning of the rabies infection increases the sensitivity of the animals to the pathogenic action of both the street and fixed rabies virus, appraised especially by diminution of the incubation and mean survival period; the influence of the hormone appears to be more evident in the hamster.

It is likewise shown that immunization of the animals with the Flury strain is favoured by cortisone administration; the degree of immunity is independent of the titer of serum neutralizing antibodies, that definitely decrease under the action of the hormone, while the state of acquired immunity visibly increases.

303. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, N.CAJAL, N.BIRZU, I.MICU, O.ZAVATE, F.VASOIU. Development of immunity during the clinical evolution of lethal rabies in man and animals. Rabies, 1961, 1, 2, 55.

Serologic investigations carried out with the sera of rabies patients, study of peritoneal immunity in hamsters, rats and mice, and titration of the virulence of the neuraxon showed the development of a certain antirabies immunity during the evolution of lethal rabies in man and animals.

The peritoneal test was positive within the first days of rabies in the hamster, irrespective if the street or fixed rabies virus was inoculated by peripheral or cerebral route. Moreover, a perfect coexistence and synergism is observed between peritoneal, humoral and splenic immunity of reticulo-endothelial origin and cerebral tissular immunity.

In the course of the protracted paralytic period in the hamster, the brain of these animals becomes autosterilized "in vivo", the virulence decreasing from a titer of $LD_{50} = 10^{-8}$ to 10^{-11} down to $LD_{50} =$ below 10^{-1} . The autosterilized cerebral tissue neutralizes "in vitro" a much larger amount of virus than the spleen.

The results obtained demonstrate that rabies - a disease that always ends in death - is, notwithstanding, immunizing, provided the intimate virus-organism conflict lasts long enough to permit the development of specific resistance. Apart from a powerful immunity, characteristic of the nervous tissue, a generalized immunity is observed, leading to a true "antirabies panimmunity".

304. ACAD.ST.S.NICOLAU, N. CONSTANTINESCU, N.BIRZU, O.ZAVATE, I.MICU, GR.TEODOROVICI. The evolution of human rabies, comparatively, in untreated patients and patients treated with the antirabies vaccine. Consecutive therapeutic directives. St.cerc.inframicrobiol., 1961, 12, suppl.133.

During the last ten years, 702 cases of human rabies have been reported, 426 of which with a clearly established diagnosis and anamnesis. Of the latter, 213 did not come to the antirabies treatment and the other 213 developed rabies in the course or long after vaccination.

Similar to the findings in other countries, the proportion (50.0 per cent) of patients with a short period of incubation, up to 30 days, was twofold higher than that of patients (22.9 per cent) with long period of incubation after the same kind of bites, and who had not undergone the antirabies treatment.

The evolution of rabies in the treated and, comparatively, in the untreated patients demands an adequate therapeutic approach.

In the case of deep bites, an efficient anti-rabies vaccine must be administered, associated to antirabies gammaglobuline, in order to prevent short incubation rabies. On the other hand, it will be necessary to administer booster doses in order to prolong and reinforce the state of immunity so as to protect the patients exposed to long-term incubation.

305. ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, N.CAJAL, N.BIRZU, O.ZAVATE, A.MORARU. The variability of fixed rabies virus. The comparative pathogenic and immunogenic activity of the "Pasteur" and "Babeş" strains. St.cerc.inframicrobiol., 1961, 12, suppl.145.

Comparison of some of the properties displayed at present by the "Pasteur" and "Babeş" fixed virus strains

(1,980 and 3,740 passages respectively) and earlier findings, showed that exclusive passages on the rabbit brain steadily increased the virulence of the viruses.

The Fermi-type vaccine prepared with the "Babeş" strain has a higher immunogenic potential than that prepared with the "Pasteur" strain.

By cross immunization experiments, the existence of antigenic differences between the two strains of the fixed virus were demonstrated, i.e. each of the viruses confers a higher degree of immunity to the homologous strain. The conclusion is drawn that the "Babeş" strain should be preferred for the preparation of the Fermi-type vaccine.

306. L.PASCU, A.ELEFTERESCU, I.ISOPESCU. Contributions to the study of rabies immunity. St.cerc.infra-microbiol., 1961, 12, suppl. 157.

A Flury rabies virus strain received from the Yugoslav F.R. was used for the preparation of vaccines from triturated guinea pig embryos and brain. The presence of virus in the vaccines was investigated by intracerebral inoculations in suckling mice and young guinea pigs.

The immunogenic potency of both vaccine variants was subsequently determined in comparison with several common rabies vaccines (vaccine adsorbed on to $Al(OH)_3$, Yachi's merthiolate vaccine, Kondo's and Fermi's vaccines). Mice, guinea pigs, rabbits and sheep were used in these experiments.

In all these titrations, Flury vaccine was found to possess an extremely low potency, while the Babeş fixed virus strain used in the Rumanian People's Republic for rabies vaccine preparation displayed considerable antigenic potency.

Nazarov's test in mice and Popovici-Stamatin's test in sheep were likewise put to trial, and the conclusion was reached that both methods are useful for the determination of the immunogenic potency of rabies vaccines.

307. N.CONSTANTINESCU, M.CEPPLEANU, I.MICU, N.BIRZU, O.ZAVATE, A.MORARU. Modified rabies virus strains isolated from human cases of meningo-encephalomyelitis following an atypical course in rabies. St.cerc. inframicrobiol., 1961, 12, suppl.:167.

Any nervous syndrome displayed by patients who have been bitten by animals (even by apparently normal ones) should be suspected of rabies. The characteristic rabies inclusions, i.e. Babes-Negri's bodies, may be absent, either because rabies in the respective case is due to an "enhanced" virus which does not cause the appearance of inclusions by itself or because it is evolving in vaccinated, i.e. partially immunized subjects, in which the process of inclusion formation is, as a rule, inhibited in its development.

308. I.BERLOGEA, I.STRATI, S.SCHOENFELD, N.CAJAL, G.POPESCU. Investigations on rabies infection and rabies immunity in animals subjected to irradiation. St.cerc. inframicrobiol., 1961, 12, suppl.:194.

In experiments performed in white mice and white rats, irradiation of the animals with 450-500 r was found not to alter their susceptibility to the inoculation of various rabies strains ("Babes" and "Pasteur" fixed rabies virus, street virus, "Flury" virus).

Consequent to the introduction of "Flury" virus, resistance to rabies is slower to set in irradiated animals. However, at the end of 20 days, it will not differ from that obtained in non-irradiated animals.

309. A.DERLEVICI, M.VOICULESCU, M.GRUIA. Benign lymphocytic meningitis. Experimentation on animals. St.cerc. inframicrobiol., 1950, 1, 1, 105.

The etiologic agent of certain non-bacterial

meningitides is investigated. Fourteen cases, exhibiting the symptomatology of lymphocytic meningitis were studied in the Colentina Clinic of Contagious Diseases.

In the experiment, 122 guinea pigs, 64 mice and 12 rabbits were used. From the cerebro-spinal fluid and the blood of the patients a causative agent was isolated, capable of inducing a lethal disease in guinea pigs on 69% of the cases, between the 8-16th day after inoculation, and in 26% of the cases in mice between the 8-26th day after inoculation. The disease is transmittable in serial passages by inoculation of brain, spleen and lung triturations.

St. cerc. inframicrobiol., 1950, 1, 2, 155.
 310. A. DEREVICI, M. VOICULESCU, M. GRUIA. The properties of the etiologic agent of lymphocytic meningitis.

The lymphocytic meningitis virus, isolated from the cerebro-spinal fluid of several patients, hospitalized in the Colentina Hospital, differed from the virus isolated by Armstrong, by its prevalent pathogenic action on the guinea pig. The virus was to be found in the brain, lungs and spleen, as fact demonstrated by the passages performed. The isoelectric zone of the purified virus ranged between pH 2.2-5.8 and the isoelectric pH between pH 2.8-4.0.

The elementary corpuscles were cocciform, approximately 100 m μ in size and were inactivated by ultraviolet light after two 30 minutes exposures.

The vaccine prepared with this virus was not immunogenic.

The present paper is a preliminary report on the results of the investigation of the virus isolated from the cerebro-spinal fluid of patients with lymphocytic meningitis. The virus was isolated and its properties were studied in serial passages. The isoelectric zone of the purified virus ranged between pH 2.2-5.8 and the isoelectric pH between pH 2.8-4.0.

311. A.DEREVICI, M.GRUIA. Investigations on the antigenic properties of the benign lymphocytic meningitis virus. St.cerc.inframicrobiol., 1950, 1, 2, 161.

Laboratory research on the antigenic properties of the virus isolated from cases of lymphocytic meningitis demonstrated the hemagglutinating potential of this virus.

Positive hemagglutination reactions were obtained with splenic, cerebral and hepatic extracts from the animals which had died of the experimental disease.

For an early diagnosis of the disease, this test, done with spleen extracts from guinea pigs inoculated with the cerebro-spinal fluid of suspect cases is recommended. The spleen is withdrawn on the 5th day after inoculation.

312. M.VOICULESCU, A.DEREVICI, I.BENEDICT, M.GRUIA. Benign lymphocyte meningitis. Clinical study of 65 cases. St.cerc.inframicrobiol., 1950, 1, 1, 75.

A study is carried out on a large group of benign lymphocytic meningitis cases, classed for the moment as such owing to the continuous identification of new etiologic agents in this disease. The authors investigate the clinical and laboratory aspect of 65 cases in the light of these data and of differential diagnosis with tuberculous meningitis.

313. A.DEREVICI. Primary viral meningitis. Rev.Stiint.Med. 1951, 4, 4, 45.

The present paper gives the history of primary viral meningitides and a classification of the viruses isolated in various countries, as well as in the R.P.R. In the "Colentina" clinic of contagious diseases, a meningitis virus was isolated, differing by certain properties from the initial

virus isolated by Armstrong, a fact which was also confirmed by the anatomic-pathologic examination.

The introduction of the Hirst test as a means of diagnosis permits an early elucidation of the etiology of some meningitis cases with clear spinal fluid.

Negative results were obtained in the attempts made at producing a vaccine.

314. A.DEREVICI, R.DINU, M.GRUIA. Localization of the benign lymphocytic meningitis virus in the experimental disease in the guinea pig. Comunicările Acad., R.P.R.1951, 1, 7, 689.

In order to study localization of the lymphocytic meningitis virus - "Colentina" strain - a group of guinea pigs were inoculated by intraperitoneal route and sacrificed at various intervals, using for virus passages the separately withdrawn organs.

The experiments showed that the spleen becomes virulent half an hour after inoculation; then, in chronological order, the lung, liver and blood. Spread of the virus seems to take place by hematogenic route.

The virus of benign lymphocytic meningitis is pantropic, affecting especially the mesodermal element; its neurotropism is secondary and reflected by involvement of the vascular and meningeal component of the system.

315. I.-A.DEREVICI, R.DINU, G.MARINESCU, M.GRUIA.
II.-A.DEREVICI, G.MARINESCU, R.DINU, M.GRUIA, D.SARATEANU, EL.LISSIEVICI, M.CELEANU. Benign lymphocytic meningitis. I.- Histopathology of the experimental disease. II.- Histopathogenesis of the experimental disease with the "Colentina" strains. St.cerc.inframicrobiol., microbiol., parazitol., 1952, 3, 1-2, 37 and 47.

The "Colentina" virus strains, isolated from the cerebro-spinal fluid and blood of patients with "Colentina" lymphocytic meningitis, constantly pathogenic for guinea pigs, caused death of the animals in most cases, irrespective of the route of inoculation. The strains, inconstantly pathogenic for mice after a small number of passages, exhibit characters different from those of the chorio-meningitis virus strain type Armstrong or type Revo. The experimental disease has a general character in guinea pigs, inducing lesions of the connective-vascular system. Stasis, oedema and hemorrhages were observed. The inflammatory phenomena usually occurred perivascularly due to lymphocytes, monocytes and histiocytes.

The manifestations with a proliferative character involve the reticulo-endothelial elements of the various tissues.

The degenerative manifestations are restricted to part of the parenchyma cells. Vascular alterations are alone encountered in the meninges and only secondary alterations in the nervous substance. The choroid plexus was not impaired. Small inclusion-like formations were interpreted as virus clumps.

316. M.VOICULESCU, M.GRUIA, A.DEREVICI. Epidemiologic aspects in some cases of benign lymphocytic meningitis. Vectors and routes of penetration. St.cerc.Acad.R.P.R.1950, 4,1-2, 71.

The authors investigate the portal of entry and route of propagation of the benign lymphocytic meningitis virus, isolated by the authors, who demonstrate the role of the mouse as vector of the disease, this animal being found in the house of 24 of the 28 cases investigated.

317. I.SAMUEL. Chorio-meningitis strains isolated in Bucharest in 1954 - 1955. Comunicările Acad.R.P.R., 1956, 6, 5, 733.

During the 1954-1955 period, 8 meningitis strains were isolated by intracerebral inoculation to mice of cerebro-spinal fluid drawn from 90 cases with a clinical aspect of benign meningitis. The possibility of breeding contamination among mice was excluded. Except for a single strain, isolated in July, all the other strains were isolated in autumn 1954 and 1955. The clinical aspect of the disease, the symptomatology of the experimental infection and the anatomo-pathologic picture of the animals which died following this infection, are those of a benign lymphocytic chorio-meningitis, of the Armstrong type.

318. I.SAMUEL. Etiologic researches in viral meningitis. Giorn. Malattie infettive e parassite, 1957, 2,

An attempt was made to isolate the etiologic agent from 115 patients with a clinical diagnosis of aseptic meningitis.

It was possible to isolate 11 strains of chorio-meningitis virus by inoculation of the cerebro-spinal fluid to white mice. The isolated strains were obtained from 9 adults, an adolescent and a child, in whose homes the existence of mice had been observed.

In another 3 cases (an adult and 2 children), the Coxsackie virus was found in the feces of the patients.

Four strains of mumps virus were isolated by inoculation of the cerebro-spinal fluid into the amniotic cavity of 7-day chick embryos. One of these strains was obtained from the cerebro-spinal fluid of a child suffering from mumps, without any clinical signs of meningitis, but with spinal fluid reaction.

319. N.DRAGANESCU. Study of an inframicrobial germ isolated from a case of benign multirecurrent meningitis. St.cerc.inframicrobiol.,microbiol.,parazitol., 1958, 9, 4, 439; Rev.Sci.Med., 1958, 3, 27.

An inframicrobial germ was isolated on embryonated eggs, from the cerebro-spinal fluid of a patient with multi-recurrent meningitis.

From the view-point of its characteristics, this inframicrobial germ cultivated, like the M C virus described by Mollaret and Cateigne, only on the chorio-allantoic membrane of embryonated eggs.

Inoculation of the cerebro-spinal fluid by intracerebral route and the scarified cornea of the rabbit, as well as intracerebral inoculation to mice and guinea pigs, were negative, which rules out the possibility of a chorio-meningitis or herpes virus.

The isolated virus did not have hemagglutinating properties, but induced intracytoplasmic inclusions in the layers of the chorio-allantoic membrane.

The embryos hatching from the eggs inoculated by intraamniotic route, exhibited cerebral hemorrhagic lesions without the presence of inclusions.

320. ST.DRAGANESCU, N.DRAGANESCU, M.I.POILICI. Acute primary choreiform encephalitis with inclusions. Presse Méd., 1958, 66, 48, 1093.

A case of acute primary choreiform encephalitis ending in death 28 days after the onset is studied. The morphologic examination of the brain showed only discrete lesions at the level of the white substance (lipid disintegration, slight perivenous glial proliferation).

By means of the Mann staining method, typical intranuclear and intracytoplasmic inclusions were revealed

in the nervous cells and amphophil corpuscular formations in the glial nuclei. The presence of these inclusions showed the viral origin of this encephalitis, the nature of which was not determined.

321. ST.DRAGANESCU, D.SARATEANU, N.DRAGANESCU. Complement fixation with the tick-borne virus (Praga antigen) in various forms of panencephalitis. Neurol., psih., neurochir., 1958, 2, 163.

The results of investigations carried out on the complement-fixation test with the sera of 27 patients suffering from various forms of panencephalitis and from 8 apparently healthy persons, from the locality in which cases of encephalitis had occurred 2 years previously, are presented. In 4 of the 14 cases of panencephalitis in various stages of the disease, positive complement fixation reactions were obtained with the sera collected 1-3 months after the onset of the affection. The complement fixation reaction was positive in a single case (subacute lateral sclerosis) of the 13 cases of peripheral panencephalitis studied serologically. In 3 of the 8 apparently healthy cases, the complement fixation reaction was positive.

322. ST.DRAGANESCU, I.VOINESCU, N.DRAGANESCU. Psychotic encephalitis. Isolation of the virus. Report read at the Session of the Society of Medical Sciences, Section of Neurology, Bucharest, September 24, 1958.

A clinical case of psychotic encephalitis with a favourable evolution is described. The disease began in April 1958, with anxiety, head-ache and fever. The patient was hospitalized a few days after the appearance of the first symptoms in a psychiatric ward, where a diagnosis of schizoid syndrome was made. In hospital, the patient exhibited a mode-

rate subfebrile state, with a fever-peak of 40.2° C and a convulsive fit. From the neurologic point of view, slight meningeal phenomena were observed, paresis of both m. rectus externus, a right facial paresis of central type, slight modification of the osteo-tendinous reflexes and motor deficiency. Moreover, the patient was confused, with slight desorientation and catatonic tendencies. Intracerebral inoculations to white mice of the cerebro-spinal fluid withdrawn in the regressive phase of the disease determined in this animal species clinical phenomena of encephalitis, serially transmissible.

323. ST. DRAGANESCU, S. VOINESCU, A. PETRESCU, N. DRAGANESCU.
Diffuse neoformation process with encephalitic aspects. St. cerc. neurol., 1958, 4, 375.

A case clinically labelled as pseudo-tumoral encephalitis is described. The morpho-pathologic examination showed diffuse sarcomatosis of the cerebral blood vessels, with actual perivascular sarcomatous encephalitis processes in the various regions of the brain, having however a tumoral thickness in the subthalamopeduncular area. Cytologic study of the infiltrative processes in the meninges and nervous parenchyma showed polymorphism and the character of the various tumoral cells. On the sections, stained by means of the Mann method, numerous eosinophil inclusion like formations of various sizes, some of them with a halo around them, were observed within the nuclei of the tumoral cells. These are chromatic formations, since they are positively stained by the Feulgen method.

324. N.DRAGANESCU, Inframicrobial meningo-encephalitis belonging to the arthropod borne group. Identification of the causal agent and study of the nervous lesions induced in the white mouse. St.cerc.inframicrobiol., 1959, 10, 3, 363.

An encephalitogenic inframicrobial germ, pathogenic for the white mouse was isolated from the cerebro-spinal fluid of a patient from the Dobrogea, admitted to the clinic with phenomena of psychotic encephalitis.

It was proved by the sero-neutralization test against the standard encephalitis serum (strain Hy PR), that the isolated germ belonged to the group of tick-borne encephalitides.

Anatomo-pathologic examination of the brain of the mice which died following the experimental disease showed a pan-encephalitis, characterized by a process of perivascular infiltration, glial proliferation and neuronophagic nodules.

325. N.DRAGANESCU. Virological determination of spring-summer tick-borne encephalitis in the R.P.R. Experimental researches on isolated strain. Report read at the Second Congress of Hungarian Microbiologists, Budapest, September 22-26, 1959.

An encephalitogenic inframicrobial germ, pathogenic for the white mouse, was isolated from the cerebro-spinal fluid of a patient from the Dobrogea, hospitalized in the clinic, with phenomena of psychotic encephalitis. The sero-neutralization test in mice against the standard encephalitis serum (strain Hy PR) showed that the isolated germ belonged to the group of Russian tick-borne encephalitis viruses.

Anatomo-pathologic examination of the brain of the mouse, which had died following the experimental disease,

showed that it was an encephalitis characterized by a process of perivascular infiltration, glial proliferation and neuronophagic nodules.

Inoculation of the virus by respiratory route to mice induced, both clinically and morpho-pathologically, pneumo-encephalitis lesions, characterized by interstitial lesions at the level of the lung and by inflammatory lesions throughout the neuraxon, specific of this viral disease.

Four serial intrapulmonary passages multiplied this virus in the pulmonary tissue, without giving it however strictly pneumotropic properties.

Intracerebral inoculation to the young and adult hamster determined clinical phenomena of encephalitis, characterized by paralysis of the hind quarters, without convulsive tonico-clonic fits or muscular fibrillation.

The anatomo-pathologic lesions are much more intense than in the white mouse and are characterized by a meningo-encephalitis process.

326. N.CAJAL, Y.COPELOVICI, M.CEPLEANU. The action of amniotic and allantoic fluids of birds on the MM encephalomyocarditis virus. Lucrările celei de a 11-a Sesiuni şt. a I.M.F. Buc., 13-15 april. 1956, 91.

In view of the results obtained with the influenza virus, investigations were carried out on 362 mice in order to establish if the amniotic and allantoic fluids can be used as diluents also in experiments with the MM encephalomyocarditis virus.

After inoculation of the virus by intramuscular route, it was found, as in the case of the influenza virus, that amniotic and allantoic fluids - especially the former - produce an increase in the virulence of MM virus, assessed

by the LD₅₀ in comparison with dilutions in normal saline.

The mechanism of production of the differences observed appear to reside in protection of the inoculated elementary bodies by the embryo fluids against the immediate defence action of the organism.

327. L.MIRZA-EMINET, I.SAMUEL. Cortical reactivity in case of inapparent infection of the MM type in white rats. St.cerc.inframicrobiol.,microbiol.,parazitol., 1956, 2, 3-4, 327.

An attempt was made to detect inapparent infection of the MM type, with the aid of conditioned reflexes. To this end, alimentary motor conditioned reflexes were elaborated in a group of 20 rats, after which the animals were inoculated with the encephalomyocarditis MM virus. Only 2 rats exhibited transitory paresis, no evidence of the disease being observed in the rest of the animals. However, significant modifications were observed in their conditioned reflex activity during the first 24 hours : prolongation of latency, inhibition of the motor conditioned reflex and non-conditioned alimentary reflex and an apparent reinforcement of differentiation-inhibition. These disturbances did not appear in the controls, which meant that although the clinical signs of the disease were likewise absent, the animal had contracted an inapparent disease, detectable by means of the method of conditioned reflexes.

328. I.ADERCA, M.IANCONESCU. Cultivation of the MM encephalomyocardiac virus in roller tubes. St.cerc.inframicrobiol.,microbiol.,parazitol.,1957, 8,1, 49.

MM encephalo-myocardiac virus was cultivated on neuronal tissue cultures of mouse embryo, by the roller-tube

method. The virus constantly produced a cytopathic effect, in the cultures of proliferative cells. Six serial passages were carried through with a theoretical end dilution of 5×10^{-10} .

The attempts made at washing the virus off the cells, showed that it is constantly adsorbed within 15 minutes, the washing not preventing the action of the virus on the cell. Intracerebral passage in mice of the culture fluids from each passage showed a decrease of the titer due probably to attenuation of the neurotropic affinity of the virus.

Encephalitis.

329. ST.DRAGANESCU, G.M.CONSTANTINESCU, F.NEREANTIU, N.

DRAGANESCU. Subacute sclerozing leukoencephalitis in the adult. The presence of intracellular lesions. St.cerc.neurol. 1959, 4, 3, 413.

The authors report the results of the anatomoclinical study of an adult case of sclerozing leukoencephalitis. The patient presented ataxia, right hemiparesis; the psychical disturbances were predominant. At the beginning, states of agitation alternated with phases of affective indifference, stereotypism and gatism. During the last months, the patient was immobilized in bed, the psychic disturbances developing up to dementia, against a cachectic background. Death occurred after a year and eight months. The diagnosis was made during lifetime. The anatomopathologic examination showed typical subacute sclerozing leukoencephalitis, with predominant bilateral temporo-insular lesions, more intense around the lateral ventricles. Besides demyelination, subcortical gliosis, nodules and perivascularitis, intracytoplasmic inclusions were also found in the nervous cells.

The varied morphopathologic aspects of sporadic encephalitis due to the tick-borne encephalitis virus, are shown. In some cases, complement fixation was positive for this virus and a virus of this type was isolated from a case of psychotic encephalitis.

350. N.DRAGANESCU. Morphologic study of experimental lesions produced in the white mouse by tick-borne encephalitis virus, isolated in the Rumanian People's Republic. Comunic.Acad.R.P.R. 1960, 10, 9, 785.

Morphopathologic investigations carried out on 84 mice, inoculated by intracerebral or subcutaneous route with tick-borne encephalitis virus isolated in the country, showed the following :

The tick-borne encephalitis virus causes in this animal species more or less marked alterations in all the organs. The lesions consist in perivascular and parenchymatous inflammatory processes, vascular and degenerative hemodynamic lesions.

The most accentuated lesions are to be found at the level of the nervous system, lungs, liver, kidneys and heart.

The results obtained demonstrate the pantropism of this viral agent, that appears in the blood of the mice one hour after intracerebral or subcutaneous inoculation and persists up to death of the animals.

351. ST.DRAGANESCU, S.SOFLETEA, A.PETRESCU, N.DRAGANESCU, P.CORTEZ. Van Bogaert subacute sclerozing leukoencephalitis with protracted evolution. St.cerc.neurol.1960, 5, 4, 595.

An anatomo-clinical study of a case of subacute sclerozing leukoencephalitis, with a 32 months protracted evolution is described. From the clinical viewpoint, the disease began with fever, in two phases, similar to Smorodintsev's biphasic milk meningo-encephalitis. Severe mental disturbances developed, with progressive and then total dementia and a hypertonic syndrome indicating rigidity by

decerebration, finally leading to death from cachexia with hyperflexion contractions. Morphologically, the demyelination process, of the leukoencephalitic type, was localized in a single hemisphere. However, both hemispheres presented intense isomorphous gliosis in the gyral axis of the atrophic circumvolutions, without demyelination, as well as in the corpus callosum which was also very atrophied. Apart from intense phenomena of myelinic disintegration, a complete absence of hematogenic inflammatory processes was noted. The presence of eosinophil inclusions was observed in the nuclei of glial cells in the affected subcortical area.

The authors discuss the etiopathogeny of Van Bogaert sclerosing leukoencephalitis and emit the hypothesis that this neuroviral disease belongs to the group of tick-borne encephalitis.

332. N.DRAGANESCU. On the susceptibility of the Syrian hamster to infection with the tick-borne encephalitis virus isolated in the Rumanian People's Republic.
Study of the morphopathologic alterations.
 St.cerc.inframicrobiol., 1960, 11, 2, 287.

Intracerebral inoculation to the young and adult hamster of the tick-borne encephalitis virus, isolated in the R.P.R., produces clinical phenomena of meningo-encephalitis, characterized by paralysis of the hind quarters, without tonico-clonic convulsions or muscular fibrillations.

The anatomo-pathologic lesions are more intense than in the white mouse, inoculated with the same virus.

The meningo-encephalitis lesions are characterized by intense perivascular inflammation.

333. N.DRAGANESCU. Certain characteristics of the tick-borne virus isolated in the Rumanian People's Republic.
St .cerc.inframicrobiol.,1960, 11, 3, 417.

The appearance and persistence in the blood of the tick-borne encephalitis virus, isolated in the country, was studied in the white mouse inoculated by intracerebral and subcutaneous route (two experimental groups).

In both groups, the virus was present in the blood one hour after infection and persisted up to death of the animals.

Inoculation of the virus by respiratory route to mice led both clinically and morphopathologically to pneumoencephalitis lesions, characterized by interstitial infiltrations at the level of the lung and specific inflammatory lesions throughout the neuraxon.

No modification of the neurotropic properties of the virus were obtained following 4 serial passages in the lung.

334. D.SARATEANU, N.DRAGANESCU, E.LISSIEVICI-OPRESCU. New data in the field of viral encephalitides. Rumanian-Bulgarian Symposium on encephalitides. Bucharest, October 26-28, 1960.

Recent advances in the classification of arthropod-borne encephalitis viruses, by means of the hemagglutination and hemagglutination-inhibition tests, are reported.

Apart from the description of new viruses - Conan, Viliuisk encephalomyelitis and Kyasanur fever viruses - the authors discuss the possibility of differentiating between various encephalitis virus strains grown in tissue cultures, on the basis of the cytopathic effect.

To conclude, the investigations of Rumanian authors concerning isolation of tick-borne encephalitis viruses isolated in the country and the results of serologic investigations carried out among the lumber workmen in various regions of the country, are reported.

335. ST.DRAGANESCU, N.DRAGANESCU. On the nature of the encephalitis cases observed to-day in the Rumanian People's Republic. Rev.neurol. 1960, 103, 2, 138.

The authors report a case of primary viral encephalitis that appeared at the end of the summer. The patient presented acute complex meningo-encephalitis; death occurred after two months. The initial meningeal onset was accompanied by moderate but persistent pleiocytosis, followed by encephalitic phenomena (consciousness changes, psycho-motor agitation, delirious confusion, final coma) against a febrile background. Complement fixation was positive in high titers with the tick virus antigen.

The morphologic examination showed necrozing encephalitis with a predominant leptomeningitis process on the convexity and neuronocorticalolysis, especially corresponding to the maximum meningeal process. The ascending frontal cortex presented intense neuronolysis, the appearance of plasmatic gliae in these zones and disappearance of the intracortical myelinic fibres. Similar lesions were found in the 5th and 6th layer of the opposite frontal cortex. In the white matter, abundant lymphocytic infiltrations were observed around the vessels and at the level of Ammon's horn. A polioclastic encephalitis picture of the Greenfield type is thus obtained.

In view of the positive complement fixation reaction for the tick borne encephalitis virus, the authors conclude on the etiology of the disease, especially as other cases were reported in that region.

336. ACAD.ST.S.NICOLAU, N.DRAGANESCU, CIEN TIN HUAI. Experimental investigations on the efficacy of the antiencephalitis vaccine (tick-borne encephalitis) prepared with silver ions. St.cerc.inframicrobiol.1961, 12, 1, 9; Biall.Naucin.Inform. 1961, 2, 154.

A 5 per cent viral suspension in a 0.15 per cent

silver nitrate solution, was prepared from the brain of mice infected with the tick-borne encephalitis virus isolated in the country, then inactivated and transformed into a vaccine with a good protective action after 44 hours at +37°C.

By elimination of the silver excess by brief centrifugation after this interval, i.e. after formation of the viral metal-protein complex, the suspension maintains its immunizing efficacy for more than 120 days.

Comparative data of the formol treated and "silvered" vaccine show the superiority of the latter.

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D.SARATEANU, N.DRAGANESCU, E.LISSIEVICI-OPRESCU. Investigations on the presence of antiencephalitis antibodies in lumber workmen. Microbiol., parazitol., epidemiol. 1961, 2, 121.

The presence of antiencephalitis antibodies was analysed by means of complement fixation in lumber workmen from 4 regions of the country.

Of the 43 sera tested, 21 yielded positive results; the proportion of positive tests was much higher in the region in which an encephalitogenic agent had been previously isolated from a clinical case.

Positive complement fixation in healthy individuals, without encephalitic antecedents, but which live or work in forest regions, are further arguments for the existence of a large number of subclinical forms of encephalitis.

338. N.DRAGANESCU. Experimental investigations on the behaviour of the autochthonous tick-borne encephalitis strain in chick embryonates eggs. Comun.Acad.R.P.R. 1961, 11, 6, 739.

The encephalitis virus, isolated in the country, identical from the serologic viewpoint to the Czechoslovakian

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encephalitis virus (strain HyPR), inoculated on the chorio-allantoic membrane of 9-10 days-old chick embryonated eggs, readily cultivates and produces characteristic lesions of the membrane, which consist in proliferation of the ectodermal cells and discrete mesodermal reaction. Maximum lesions were observed 72 hours after inoculation, period in which the embryos do not appear to suffer in their development.

After inoculation into the yolk sac of 7 days embryonated eggs of a 1/10 brain suspension of mice infected with this virus, the presence of the virus in high concentrations was observed both in the yolk sac and embryo. 72 hours after inoculation, the virus multiplies in the yolk sac and embryo, without a high mortality.

Morphopathologically, the embryos infected in the yolk sac and maintained 72 hours at $+37^{\circ}\text{C}$, present discrete inflammatory lesions in the meninges and the remaining organs. Maximum degenerative lesions are present also in the liver, heart and nervous system of the embryo.

339. N.DRAGANESCU. The presence of inclusions in new-born mice infected with the tick-borne encephalitis virus isolated in the R.P.R. Rev.Sci.Méd.1961, 6,1-2, 37.

The Mann staining method showed the presence of intraeytoplasmic inclusions in the cortical neurons of the new born and adult white mouse, infected by subcutaneous route with the tick-borne encephalitis virus, isolated in the country.

The presence of these inclusions in the brain of the new born mouse excludes possible spontaneous inclusions in this animal species, a fact which leads to the assumption that this germ - identical serologically to the Czechoslovakian encephalitis virus (strain HyPR) presents certain differences with regard to other viruses of this group.

VII

RESPIRATORY VIRAL DISEASES

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340. R. PORTOCALA, A. DEREVICI. Laboratory investigations on a viral disease with a non-characteristic aspect. An unusual form of influenza. Rev.St.Med.1950, 2, 8, 550.

An epidemic with a high incidence rate, which appeared in a children's collectivity and which from the clinical standpoint was represented by cases that did not behave as a current disease, was identified by means of the cold agglutination test, Hirst test, Paul-Bunell-Hăngănui test, etc. The serologic reactions showed that it was a case of influenza whose etiologic agent behaved in the most characteristic way, especially in the Hirst test.

- 341.- N. CONSTANTINESCU. The problem of influenza in the light of the latest researches. Rev.Stiint.Med.1951, 3, 23.

General report on problems regarding the epidemiologic, etiologic, immunologic and prophylactic aspects of influenza.

- 342.- G. MARINESCU. Epidemic diarrhea in the new-born infant. Rev.Stiint.Med., 1951, 7, 37.

Epidemic diarrhea in the new-born infant is a disease that has begun to be more clearly separated from other diarrheic syndromes of a bacterial (especially due to bacillus coli or staphylococci) or parasitic origin. Several viruses, that can determine diarrheic syndromes, are described.

The author discusses the gravity of the disease and the preventive measures that must be taken.

- 343.- A. DEREVICI, G. MARINESCU, D. SARATEANU, M. GRUIA, G. IONASESCU. Serological and experimental investigations during the 1950-1951 influenza epidemic. Report read at the section of Microbiol., Inframicrobiol., parasitol. and Infect. diseases of the Soc. Med.Sciences March 1952.

Sample tests were initiated in view of establishing the serologic diagnosis of the 1950-1951 epidemic influenza, which seemed to be due to virus A type PR₈.

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An influenza virus strain was isolated on mice by inoculation of the material from the triturate of several organs (trachea, lungs and spleen from a lethal case of pseudo-membraneous laryngitis).

The virus was pathogenic, leading almost constantly to death of the animals after 4 passages, between the 3rd and the 6th day after inoculation. The virus was maintained during 11 passages on animals.

344.- I.IVAN, M.VOICULESCU, N.CAJAL, A.DEREVICI . Epidemiology and prophylaxis of influenza. Pediatrics, 1952, 6, 3.

The characteristics of influenza epidemics are described and a list of laboratory diagnosis by direct and indirect methods. The pathogeny of influenza and the most adequate means of assisting both adults and children in and out of hospital are discussed. The most effective non-specific methods of prophylaxis in the epidemic periods, particularly in maternity hospitals and day-nurseries are recommended.

Analysis of the efficiency of specific prophylaxis by vaccination shows a decrease of the morbidity rate in anti-influenza vaccinated persons. The advantage of intranasal immunization is underlined on the basis of the data in Soviet and Rumanian literature.

345.- Gh.MARINESCU, D.SARATEANU, A.BALINT, G.CURTEANU, E.MICLOSI, A.CODREA, GH.BARBULESCU, D.GHITEA. Investigations on severe forms of influenza in small infants. Clinical, inframicrobiologic, epidemiologic and morphopathologic study. St. cerc.inframicrobiol,microbiol., parazitol., 1953, 4, 3-4, 331.

With a view to establishing the etiopathogeny of the severe forms of influenza in small infants in the course of an epidemic, a clinical, inframicrobiologic, epidemiologic and morphopathologic study was carried out, particularly from the standpoint of the micro-organism and environmental factors.

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Clinically, the disease was characterized by a high mortality rate in infants under the age of 6 months, with an acute malignant toxic-infectious picture (100 lethal cases), not influenced by the usual therapy.

Virologically and epidemiologically, an influenza virus strain with antigenic properties belonging to type A/PR.8, but with particular pathogenic properties, was revealed.

The virus was detected 3 to 4 times more often in children than in adults. It was possible to establish an epidemiologic filiation between the cases and the family doctor or various children's communities.

The morphopathologic study showed the presence of extensive vascular, degenerative and proliferative lesions caused by the influenza virus and secondary generalized hemorrhagic capillaritis lesions, which appear as a common morphopathologic element in all the organs.

346.- G. MARINESCU. Particularities of influenza in children. Report read at the Romanian-Soviet Institute of the R.P.R. Academy, December 1953.

Several particularities of influenza in children, taken from Russian and Soviet literature are described.

Special stress is laid on the exceptionally severe clinical forms in small infants.

347.- M. MINCULESCU, G. VASILIU, N. CAJAL. Acute viral infections of the respiratory tract in early childhood. *Pediatrics* 1953, 2, 3.

A synthesis of the material presented at the Fifth Session of the Council of Pediatrics concerning the part played by acute viral infections of the respiratory tract in infantile morbidity in our country, with special reference to their diagnosis, treatment and prevention. Emphasis is laid on influenza infections which sometimes determine the whole clinical evolution and other times open up the way to secondary microbial infections.

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A description is made of the polymorphous clinical aspect of diverse pulmonary viral diseases, that cannot always be attributed to the virus type but also to the way in which the body reacts.

The role of the action of the virus upon the nervous system in producing certain functional and morphologic disturbances encountered, are discussed.

As regards the therapeutics of these infections, stress is laid on the necessity of a complex treatment, addressed both to improvement of the environmental factors and to the macro- and micro-organism.

348.- A.DEREVICI, I.MIRZA, AL.BRONITKI, AL.PETRESCU, D.SARA+ TEANU. The effect of the influenza virus on the reflex-conditioned nervous activity in mice and rats. St. ...
cerc@tinframicrobiol., microbiol., parazitolo. 1954, 5
 3-4, 349.

Alimentary motor conditioned reflexes were elaborated in a group of mice and rats, after which the animals were inoculated with the influenza virus. Twenty-four hours after inoculation the establishment of a supraliminary inhibition process is observed, manifested by prolongation of latency, inhibition of the motor-conditioned reflex, increase of the time necessary for ingestion of food and apparent improvement of differentiation-inhibition. In mice, these changes appeared long before the clinical symptoms and became increasingly severe until the animals died. In rats, these changes were less severe. On the 22nd day, the rats were sacrificed and hemagglutino-inhibiting antibodies were found in their blood; passages carried out with the lung of these rats caused the death of the mice, which shows that, although the rats did not exhibit clinically any symptom after inoculation of the influenza virus, they had contracted an inapparent disease, detectable by the method of conditioned reflexes.

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349. A.DEREVICI, D.SARATEANU, AL.BRONITKI, AL.PETRESCU, M.GRUIA
Data on the natural variability of the influenza virus re-
sulting from the study of certain strains identified in the
RPR during the 1950-1953 period. The Works of the Scienti-
 fic Session of the Section of the Medical Sciences, the
 RPR Academy, 1954, 565,

Study of the influenza virus strains isolated in the
 R.P.R. during the 1950 - 1953 period, shows the great va-
 riability of this virus. The strains isolated in the first
 year belong to type A: an antigenic A₁ fraction appeared
 in the strains isolated subsequently. The existence of so-
 me strains in phase " Q " was likewise established. Some
 of the strains isolated had an increased antigenic poten-
 tial, determining the formation of antibodies in high ti-
 ters in the sera of immunized animals, as well as high re-
 sistance to challenge inoculations.

Comparative experiments carried out with the vaccine
 prepared with a formol-attenuated virus or with phytoncytes
 showed the superiority of the formol-treated vaccine.

350.- A.DEREVICI, D.SARATEANU, AL.PETRESCU, N.DRAGANESCU,
 AL.BRONITKI, M.ISRAEL. Antigenic correlations between
the influenza virus strains isolated in 1953 and
1954 in the R.P.R. St. Cerc. inframicrobiol., microbiol.,
parazitol., 1955, 6, 1-2, 17.

Antigenic correlations between the influenza virus
 strains isolated in mice during the pre-epidemic, epidemic
 and immediate post-epidemic periods in the R.P.R. in 1953-
 1954 were investigated by means of cross hemagglutination -
 inhibition reactions.

They found that the relatively homogenous strains be-
 longed to type A and also had an antigenic A' fraction in
 a higher proportion in the strains isolated in 1954, which
 likewise possessed a reduced antigenic type B fraction.

According to the Van der Veen classification, the
 isolated strains belonged to phase " Q ", with the excep-

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tion of one strain belonging to phase " P ".

The immune sera prepared with the 1953 strains had a low inhibition potential for the standard strain A/PR₈.

The data obtained showed the existence of a natural variability in the antigenic properties of the isolated strains.

Study of the variability of the influenza virus in nature, in connection with the outer medium with which it constitutes the unitary whole, will make it possible to investigate its most important biologic characters, a knowledge of which is absolutely necessary for obtaining an effective prophylaxis and therapy.

351.- A.DEREVICI, AL.PETRESCU. The influence of non-specific stimulation of the nasal exteroceptors on anti-influenza immunization in rats and mice. ~~St. cerc. inframicrobiol.~~ microbiol., parazitol., 1955, 6, 1-2, 25.

In view of increasing the effect of anti-influenza vaccination applied by subcutaneous route, the authors started from the principle of the " dominant " factor established by Uhtomski, i.e. reinforcement of the dominant focus caused by vaccination, by association of a weak non-specific stimulation of the nasal exteroceptors obtained with an astringent substance (0.1% ZnSO₄ solution). According to Uhtomski, intervention of stimulation in an organism in which a powerful focus of excitation exists results in reinforcement of the response to the strong stimulant and not to the weak stimulant.

In the experiments carried out, the astringent substance was applied coincident with the vaccination and 6 and 13 days after vaccination. The experiments were done on rats and mice. The reaction of the organism in rats was checked by titration of serum HAI antibodies, a nineteenfold increase being observed in the vaccinated rats to whom stimulation of the receptors was associated and only a ~~tten~~tenfold increase in the control animals. In mice, the non-specific stimulant

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applied at the same time as vaccination conferred a protection of 60 % as compared to 20 % in the controls, which had not received $ZnSO_4$ (small doses of vaccine were used in the experiment, in order to obtain a better differentiation of the results). The phasic character of the evolution of resistance in the anti-influenza vaccinated animals was likewise observed.

352.- N.CAJAL, M.CELEANU. Action of chick embryo fluid on the influenza virus. St.cerc. inframicrobiol., microbiol., parazitolo., 1955, 6, 3-4, 419.

Study of the influence of chick embryo fluids on some strains of the influenza virus type A, revealed an increase in the virulence of the inframicrobe, under the action of the amniotic and allantoic fluid (particularly the amniotic fluid), assessed by establishing the LD_{50} after intranasal inoculation to mice. The best results were obtained with embryo fluids from 10-12 day old embryos.

The data obtained set the problem of using chick embryo fluids as diluents in experiments with influenza viruses.

353.- A.DEREVICI, D.SARATEANU, AL.BRONITKI, A.PETRESCU, N.DRAGANESCU, C.SATMARI, J.PETRUSCA, A.STANCU, A.TIMBERMAN, M.PIRONCOF. Dynamics of anti-influenza serum antibodies in children and adults vaccinated with the autochthonous vaccine. The role of non-specific stimulants. St. Cerc. inframicrobiol., microbiol., parazitolo., 1955, 6, 3-4, 429-441.

Investigations were carried out on the immunogenic value of a 5 % formol treated autochthonous vaccine, prepared from mouse lung with strain type A isolated in the R.P.R., in the 1953 pre-epidemic period. Investigations were also conducted on the influence of non-specific stimulants on immunogenesis.

In vaccinated persons, a marked increase was observed of serum HAI antibodies homologous to the strain of the vaccine, and a less significant increase in the antibodies to other

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strains. The antibodies likewise increased in the controls, which had received normal protein, a fact which may be interpreted as a vestigeal response caused by non-specific stimulants in the persons partially immunized during the influenza post-epidemic period. In the controls, that had not been inoculated, no increase of the antibodies was observed.

The data reported coincide with the experimental results obtained in mice and rats.

The authors advocate the association of a non-specific stimulant to anti-influenza vaccination.

354.- G.MARINESCU, D.SARATEANU ; G.CURTEANU. Investigations on the spread of influenza in children. St. cerc. pediatrie 1955, 2, 27.

A comparative serologic and inframicrobiologic study was conducted on influenza epidemiology in various children's communities and adult cases. A number of 428 Hirst tests were performed in 388 cases (patients, suspects, contacts or healthy subjects). The results of these investigations revealed the presence of the influenza virus A, with antigenic properties also linked to type A', in 26 per cent of the sick children.

As regards the age-group, a tendency was observed towards a higher morbidity and mortality rate in the smaller age groups: breast-fed infants yielded 36.1 per cent positive reactions (in naso-pharyngeal washings), small children in 15.1-27.5 per cent, whereas bigger children and adults presented variable values. (from 0 - 11.8 per cent).

The epidemiologic data together with the study of the influenza virus in the rhino-pharynx and of hemagglutino-inhibiting antibodies, showed that the crowded districts were affected in the first place. At the moment when researches were being carried out the morbidity and mortality rates in infants were gradually decreasing, the number of influenza virus carriers in the rhinopharynx was very low and the number of children with a high titer of hemagglutino-inhibiting

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antibodies had increased. Due to the spread of the epidemic to other less crowded districts, a maximum morbidity rate was found, with the greatest number of influenza virus carriers among children.

355.- D.TARCHILA, N.DRAGANESCU.- Investigations on the viral nature of some inclusions found in the course of influenza. Report read at the Session of the Institute of Inframicrobiology, December 20, 1955.

Continuing the investigations of one of the authors on inclusions found in the pharyngeal epithelium during an influenza epidemic among small infants, a study was carried out in a group of 18 small infants vaccinated against influenza. A live attenuated vaccine prepared from mouse lung was inoculated by intranasal route.

Cytoplasmic inclusions were not detected in the pharyngeal epithelium of the infants before vaccination; they appeared 4-6 days after administration of the vaccine and persisted 5 to 9 days. The Feulgen reaction was positive only on the first day after the appearance of the inclusions. Bauer staining was constantly negative. A conclusion is drawn on the viral nature of influenza pharyngeal inclusions.

356.- P.STROESCU ÷ ATHANASIU, M.GRUIA, AL.PETRESCU
AL.BRONITKI. Researches on the neurotropism of some influenza virus strains. St. cerc. inframicrobiol., microbiol., parazitol., 1956, 2, 3-4, 339. National Congress of Medicine, Bucharest, May 1957. Comunicările Sect. neurol., endocrinol., București, 1957.

The neurotropism of three influenza type A/PR₈ virus strains, isolated in the R.P.R. was investigated. In all the cases, the virus, pathogenic for the white mouse, was to be found following intranasal inoculation also in the brain of the animals after their death. Serial passages from brain to brain increased the pathogenic potential of the influenza virus for the nervous system, constantly ending in

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death of the animals. In this way, two varieties of the influenza virus are obtained: one especially adapted to the respiratory apparatus, and which is slightly pathogenic for the central nervous system, and another especially adapted to the central nervous system and which is less pathogenic for the respiratory apparatus. In both cases, irrespective of the route of inoculation, the influenza virus is to be found both in the lungs and the brain of the dead animals. In the lungs, the virus causes hemorrhagic alveolitis, oedema of the alveolar septa, vascular congestion and thrombosis, reduced lymphocyte infiltration. In the brain, congestion of the meninges and cerebral blood vessels can be observed, cerebral turgescence, clasmotodendrosis and capillary hemorrhagies. The allergic character of the lesions may be noted in both cases.

The authors conclude that the influenza virus usually possesses a neurotropic property and that this property becomes more accentuated after passages carried out only by cerebral route with nervous substance.

357.- S.CARNARU, R.GANEGLIA G.MARINESCU. Morpho-pathologic aspects in the severe forms of influenza in infants and small children. Third National Conference of Pediatrics, February 8 - 10 1956, 246.

The circulatory modifications (hyperemia, hemorrhagies) are especially accentuated in the brain, lungs and heart, and are due to disturbances in the diencephalon nuclei and direct modification of the capillary wall by the influenza virus or by its toxic products, those of associated microbial flora and that resulting from tissular destruction.

Circulatory disturbances account for the severe manifestations in the course of influenza, such as cerebral oedema which constantly appears in lethal cases and pulmonary oedema, which is often the cause of death in small infants. Blood stasis likewise contributes to anoxia. Lympho-polyblastic and histiocyte infiltration is constantly encountered in the lung, more seldom in the liver and very rarely

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in the meninges and cerebral substance. This type of inflammatory infiltration seems to represent the particular response of the organism to the aggression of the virus. Cellular infiltration in the lungs contributes to disturbances of the gaseous exchange at this level and may lead to diffuse sclerosis of the pulmonary tissue. Degenerative lesions of variable intensity appear in the nervous cells and in the parenchymatous cells of the liver and kidney and sometimes in the myocardium. These are due to toxins and hipoxia. The direct action of the virus on the parenchyma cells has not been demonstrated.

The lesions of the liver and kidneys contribute to the toxic state of the sick children and those of the myocardium to aggravation of the circulatory disturbances.

358.- A.DEREVICI, D.SARATEANU, AL.PETRESCU, N.DRAGANESCU, AL.BRONITKI. New data on the natural variability of the influenza virus studied in the R.P.R. in 1954. St.cerc.inframicrobiol., microbiol. parazitol., 1956, 2, 1-2, 65.

A comparative study was carried out on the influenza virus strains isolated in 1954, a remote post-epidemic period, and the strains isolated in 1953 (pre-epidemic, epidemic and immediate post-epidemic period) and it was found that the strains isolated in 1953 required a smaller number of passages to be adapted (2,9) than those isolated in 1954 (12,2). The mean time until death of the animal was 5.5 days for the 1953 strains and 9 days for the 1954 strains. Similarly, the 1953 strains became adapted in 86,66% of the cases, whereas the 1954 strains only in 36,3% of the cases.

The strains isolated in 1953 caused massive pulmonary hepatization and yielded high HA titers, and those isolated in 1954, partial hepatizations and low HA titers in the lung.

Investigations were likewise carried out on the macro-organism by quarterly determination of the evolution of serum HAI antibodies.

The definitely decreased biologic properties of the strain isolated in the remote post-epidemic period, coincide

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with increase of the human serologic index with regard to the antigenic A fraction predominant in the isolated strains.

359A.DEREVICI. Sterilizable apparatus permitting the rapid preparation in closed circuit of an anti-influenza ovovaccine. Comunicările Acad.R.P.R. 1956, 6, 5, 723.

An apparatus, by means of which an anti-influenza vaccine can be prepared in closed circuit is described.

The method of preparation is based on the principle of Haare and McClelland of adsorption and elution of the virus on the red blood cells of the embryonated egg.

The virus is taken up again in a small volume of saline and treated with 0.25% formol. The new element of the apparatus consists in the handling in close circuit, which insures maximum sterility, since centrifugation is no more necessary.

360A- A.DEREVICI. The problem of specific anti-influenza prophylaxis. Third National Conference of Pediatrics, Bucharest, February 8-10, 1956, 265-268. - Probleme de Inframicrobiologie, Ed.Med., 1956, 149. p

In choosing the influenza virus strains for the preparation of a vaccine, account must be taken of the antigenic and immunizing properties of the various strains isolated from the population of the R.P.R.

As regards the route of administration, both in the USSR and in the R.P.R., subcutaneous inoculations, still applied to-day in many countries, have been replaced by intranasal inoculation. This route of administration is preferable, since it represents the natural route of infection. Association of certain non-specific stimulants increases the effect of vaccination.

The anti-influenza vaccine brings about a decrease of the morbidity rate, the protection index of approximately 3.5.

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361. ~~A. DEREWICI~~, N. DRAGANESCU. Data on the application of the precipitation test in the diagnosis of influenza in comparison with the hemagglutination-inhibition test. St. cerc. inframicrobiol. microbiol., parazitol., 1956, 2, 3-4, 321.

For the diagnosis of influenza, a precipitation test is proposed, using as antigen an aqueous extract of previously infected mouse lung, pulverized after alcohol treatment. Comparing the results with those of the hemagglutination-inhibition test, 70% negative results are obtained with the sera yielding HAI negative values and 85% positive precipitation. Results with the sera yielding positive hemagglutination-inhibition titers. There is therefore a fairly close parallelism between these two types of serologic reactions.

362. ~~A. DEREVICI~~, A. FRADIS, AL. BRONITKI, M. GRUIA. Investigations on higher nervous activity in man in the course of anti-influenza vaccination. - Works of the Second Session of the Medical-Pharmaceutic Institute, Bucharest, 1956, 90. - The National Congress of Medical Sciences, Bucharest, May 1957, Sect. neurol. endocrinol., 31.

The Ivanov-Smolenski method for the study of changes in the higher nervous activity was applied to a number of children vaccinated subcutaneously against influenza (mouse lung); the controls received instead of the vaccine a similar mouse-lung protein.

Changes were observed in the stability of the motor conditioned reflexes, increase of the latent period, increase in the intensity of the conditioned reflex and de-inhibition of differentiation after a discharge of stimuli.

Quantitative differences alone were observed between the vaccinated children and the controls which had received the normal protein, the hemagglutinating-inhibiting antibodies however, were increased only in the vaccinated children.

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363.- A.DEREVICI, D.SARATEANU, A.PETRESCU, A.BRONITKI, M.GRUIA, N.DRAGANESCU. Research on the problem of influenza in the R.P.R. in the 1950 - 1954 period. Third National Conference of Pediatrics, Bucharest, February 8-10, 1956, 334.

Between 1950 and 1953 influenza virus A was isolated in our country and in the following years several varieties which also had in their antigenic complex fraction A₁. Although the influenza virus strains isolated in 1953-1954 presented the same antigenic fractions, they behaved differently from the serologic point of view. The process of variability may be observed both in the strains isolated at the beginning and at the end of 1954.

Serologic investigations with human sera collected every 3 months in various towns in the country demonstrated the correlation between the existing HAI antibodies and the influenza virus that caused the epidemic or appeared sporadically.

364.- G.MARINESCU, D.SARATEANU, N.DRAGANESCU, B.FUHRER, I.STERESCU. Modifications of the nervous system in the course of influenza. Morpho-physiopathologic aspects. (Preliminary note). Third National Conference of Pediatrics, February 8-10, 1956, 303.

With a view to investigating the mechanism of nervous lesions in influenza, a study was carried out on the central nervous system of 25 children, which died from various forms of influenza (toxic, nervous, influenza croup, pneumopathy etc.) and 22 animals (adult or suckling mice and rats), inoculated intranasally or intracerebrally with various solutions of A virus, alone or associated to bacterial germs (haemophilus influenzae, staphylococcus or pneumococcus).

The authors give a minute description of the lesions encountered, oedematous and hemorrhagic alterations being the most frequent. Synthesis of the cerebral histopathologic data in man and animals showed that the clinically observed nervous manifestations in influenza do not seem to be due

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to a virus adapted to the brain, but to the common pneumotropic virus with a toxic nervous action.

The virus and its toxic products seem to act upon the nervous cells through the intermediary of the blood vessels. It is possible that the vascular action of the pneumotropic virus is smaller than the specific nervous action in the purely cerebral forms.

As the authors worked exclusively with an influenza virus strain adapted to the lung of mice, their investigations do not exclude the possibility of appearance with time of a strictly neurotropic influenza virus strain.

365.-GH. MARINESCU, D. SARATEANU, B. FUHRER, N. DRAGANESCU.

Trials to reproduce influenza interstitial pneumonia.
Preliminary data. Third National Conference of Pediatrics, February 8-10, 1956.

A group of 232 animals (sucklings and adult mice and rats) was inoculated with two different dilutions of the influenza virus, alone or in association with other bacterial germs more often observed in the course of human influenza (*haemophilus influenzae*, *staphylococcus*, *pneumococcus*), by nasal or intracerebral route.

The histopathologic examination of the lungs showed in certain conditions the existence of interstitial pneumonia: massive lymphocyte infiltration around the bronchi and blood vessels, spreading in some places to the pleura and thickening the inter-alveolar septum ten and twenty-fold. At the same time a moderate stasis process was observed in the capillaries, hyperthrophy of the peribronchial lymphoid nodules and more seldom catarrhal alveolitis.

The appearance of interstitial infiltrates, similar to those in the human disease, were linked to a series of factors: the pathogenic agent, the amount of virus, duration of the action of the virus, the degree of reactivity of the animal, age of the animals, and route of inoculation.

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In the experiments of the authors interstitial pneumonia was more frequent and definite in mice, following intranasal inoculation of the influenza virus without bacteria, in high dilutions.

366.- GH.MARINESCU, V.CIUREZU, D.SARATEANU, B.FUHRER, J.SAMUEL, N.DRAGANESCU. Cardiac lesions in the course of influenza in infants. The Third National Conference of Pediatrics, February 8-10, 1956, 324.

Involvement of the heart is to be feared in the course of influenza. The pathogeny of cardiac lesions in influenza is not yet clear. The authors briefly described the probable factors and the way in which they condition these myocardiac processes.

Cardiac manifestations were studied in 18 children and 42 animals (suckling and adult mice and rats), inoculated only with the influenza virus or with the influenza virus associated to a common bacterial flora.

The nature of the cardiac lesions seems to depend both upon the direct action of the influenza virus and its toxic products on the muscular fiber, and especially on the intensity of the vascular (coronaritis) and nervous lesions to which it gives rise, as well as upon the degree of the infiltrative pulmonary lesions which result in cardio-pulmonary insufficiency.

The cardiac histopathologic picture varies with the clinical form of the disease, the reaction of the organism or with its degree of sensitivity to the action of the influenza virus and, of course, with the virulence of the influenza inframicrobe associated or not to pathogenic bacteria.

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367.- G.MARINESCU, D.SARATEANU, B.FUHRER, V.COJOCARU.

Hepato-pancreato-renal lesions in the course of malignant influenza. The Third National Conference of Pediatrics, February 8-10, 1956, 331.

The toxic syndrome in malignant forms of influenza seems to be due not only to the "toxicity" of the influenza antigen, with a deleterious action on the nervous system, but also to the substances resulting from the upset of the metabolic functions of at least 3 organs: liver, pancreas, kidneys.

Study of the products collected from lethal human cases and from animals inoculated with the virus or with the virus in association to pathogenic bacteria, confirms this hypothesis. Therefore, the necessity results, from the practical view-point, of applying rational preventive therapy for these metabolic upsets, which may appear in the severe lethal forms of influenza.

368.- G.MARINESCU, D.SARATEANU, B.FUHRER, M.IONESCU.

Investigations on the sensitivity of suckling mice to the influenza virus. Third National Conference of Pediatrics, February 8-10, 1956, 339.

Medical investigations during the last epidemic waves showed the severity of influenza for the breast-fed and small infant.

The authors carried out a comparative study of the evolution of influenza in suckling and adult white mice. A group of 93 animals was divided as follows: one group was inoculated with the influenza virus, a second with the influenza virus together with a bacterial suspension and the third control group only with bacterial germs.

The results obtained 9 days after inoculation showed the extreme pathogenicity of the influenza virus for suckling mice; of the mice inoculated with the influenza virus in titers of 1/18,000 none died, whereas the mortality rate among

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the suckling mice was 80 %. The signs of the disease appear sooner in the sucklings than in the adult and are more severe. Association with *Haemophilus influenzae* increases the mortality rate both in adult and suckling mice. At a dilution of 1/6,000, all the adult and suckling mice die and at 1/18,000 all the sucklings die and 60 % of the adult mice.

Hemocultures are frequently positive, especially in sucklings. These experimental data are analogous to the clinical data demonstrating the high sensitivity of the suckling mouse, manifested by a high morbidity and mortality rate.

369.- G. MARINESCU, D. SARATEANU, B. FUHRER and N. DRAGANESCU.
Ganglionic modifications in severe forms of influenza in small infants. The Third National Conference of Pediatrics, February 8-10, 1956, 343.

A study was carried out on the lymph-nodes taken from the tracheo-bronchial region, at the level of the pulmonary hilus, the cervical and mesenteric ganglia from children which had died of severe forms of influenza and from mice inoculated with the influenza virus alone or in association with *haemophilus influenzae*, *pneumococcus* or *staphylococcus*. The most varied and intense modification may be observed in the tracheo-bronchic and hilus lymph nodes.

In human cases of toxic influenza and in mice inoculated only with the influenza virus, stasis and hemorrhagies may be observed in the sinuses; in influenza with laryngitis or pneumopathies, as well as in the mice inoculated with the influenza virus associated to bacteria, leukocyte infiltrations also occur as well as tumefaction of the endothelial cells, flattening of the follicles and germinal centers and a reticular reaction; in the nervous forms of influenza, during convalescence in the pulmonary forms and in inoculated rats, unimportant hemorrhagies, moderate stasis, lymphoid hyperplasia and frequent mitosis occur. The cervical and mesenteric lymph nodes react particularly in toxic

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influenza or in cases with enanthema and severe tonsillitis.

In influenza, the histologic picture of adenopathies is dominated by congestion and slight reticulo-endothelial hyperplasia. The ganglionic modifications are linked to the action of the virus and accompanying bacteria. It has not yet been fully established if the influenza virus multiplies in the lymph nodes.

370.- G.MARINESCU, D.SARATEANU, B.FUHRER, N.DRAGANESCU, J.SAMUEL, M.IONESCU, V.COJOCARU.- Morphopathologic aspects of experimental influenza in the suckling mouse. St.cerc.inframicrobiol., microbiol.parazitol. 1956, 2, 1-2, 77.

A number of 135 mice (suckling and adults) and 97 rats (babies and adults), were inoculated by intranasal route, with various dilutions of influenza virus type A, strain "T", alone or together with various bacterial germs. The influenza virus determined in suckling mice a much more severe disease than in adult mice, giving a swifter disease and a higher mortality rate. Inoculation of the influenza virus together with another germ, particularly Pfeiffer's colibacillus, aggravates still further the clinical picture. In many cases, the germs crossed the naso-pharyngo-pulmonary barrier, giving rise to septicemia. In baby rats, influenza was subclinical and inapparent and in rats almost always inapparent.

The histopathologic lesions caused by the infection were varied, generalised and fairly important, as the baby rats were not able to limit the infection to the portal of entry. The lesions of the respiratory apparatus and those of the vascular apparatus (hemorrhagic capillaritis), were very marked, but could not fully explain the intense generalised parenchymatous modification. Besides the tropism of the influenza virus for the epithelium of the respiratory apparatus, or the toxic action of the influenza virus on the vascular endothelium after penetrating into the circulation (viremia), other affinities for the nervous, hepatic,

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renal, cardiac and pancreatic parenchyma can also be assumed (due perhaps to toxins).

The authors believe that these investigations will contribute to the physiopathology and therapy of the severe forms of influenza in breast-fed infants.

371.- L-MIRZA . Cortical reactivity in anti-influenza immunity processes. Report read at the Society of Medical Sciences, Bucharest, October 19, 1956.

One of the several aspects of immunogenesis processes, was investigated, i.e. the reactivity of the cerebral cortex during anti-influenza immunity. The experiment was carried out on a group of 30 rats. Cortical reactivity was studied by means of conditioned reflexes. When the reflexes were well established, the animals were vaccinated with the anti-influenza vaccine. In the first 24-48 hours after vaccination, a powerful state of supraliminary inhibition was observed in the conditioned reflex activity. Periodically the reflexes came back to normal, an inhibition phase appearing soon afterwards, the conditioned reflex activity thus taking on an undulating aspect. A parallel study of this activity and of the titer of antibodies showed that this titer did not increase to the same extent in all the animals and that there existed a strict parallelism between this factor and the severity of the disturbances of conditioned reflex activity.

372.- D.SARATEANU, I.NICOARA, EIZICOVICI, L.VIRF, COVACI
Dynamics of serum anti-influenza antibodies in vaccinated persons in the town of Tg. Mures. - Comunicari
le Soc. Stiint.med., Tg.Mures, February 8, 1956.

The results of serologic investigations in 277 cases of vaccinated persons and 266 controls are reported.

An increase of anti-influenza antibodies is observed for all virus types (A, A', B), the increase being higher for type A and lower for types A' and B.

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The highest antibody titer was noted 2 weeks after vaccination, decrease taking place approximately 2 months after vaccination.

Although epidemiologic tests were not carried out, the authors conclude that in view of the innocuousness of the vaccine, prophylactic vaccination should be recommended as the most effective method for the control of influenza.

373.- D. TARCHILA, GH. MARINESCU & Laboratory diagnosis of the severe forms of influenza in infants. The third National Conference of Pediatrics. February 8-10, 1956, 257.

The laboratory diagnosis of influenza in small infants is of great practical use, particularly in the severe and atypical forms. Difficulties are however encountered due to the particular serologic reaction of the small child and to the collecting of pathologic products at this age. The laboratory diagnosis of influenza in the small infant is based upon specific elements (the causal agent and serologic reactions) and nonspecific elements (leukogram, etc.).

The presence of the causal agent can be detected by morphologic changes in the naso-pharyngeal epithelium (rhinocytogram and pharyngocytogram), by inclusions, elementary bodies and finally by identification of the influenza virus in various pathologic products (naso-pharyngeal washings, feces, blood, cerebrospinal fluid, urine, and fragments of viscera in lethal cases) and their inoculation to sensitive animals (mice, ferrets). Specific antibodies are revealed by hemagglutinin-inhibition, seroneutralization, complement fixation, and precipitation on flocculation tests.

The nonspecific elements of diagnosis are: the leukogram, sedimentation rate, cold agglutination and certain metabolic disturbances that appear in the course of influenza.

The above procedures are described in detail, special stress being laid on the value of repeated hemagglutinin-inhibition.

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374.- M.VOICULESCU, M.RADULESCU, P.MICHEL, I.SAMUEL.

The incidence of influenza etiology in atypical pneumonias. Second Scientific Session of the Medico-Pharmaceutical Institute, Bucharest, April 1956, 184.

In the absence of influenza epidemics, investigations were carried out over a period of 8 months, on the incidence of influenza etiology in atypical pneumonias - and a proportion of 29.1 % influenza pneumonias, was found, identified by means of the Hirst test.

The clinical forms were medium and slight. The data obtained demonstrate maintenance of influenza in the inter-epidemic periods.

375.- A.BRONITKI, A.PETRESCU, P.PETRESCU, P.ATHANASIU-STROESCU.- Isolation of an influenza strain with predominant neurotropic character from an infantile lethal case. St. cerc. inframicrobiol., microbiol., parazitol 1957, 8, 4, 561.

A new influenza virus strain was isolated from a supracute form of influenza, ending in death of the infant, and adapted to the white mouse by intracerebral and intrapulmonary inoculations of trachea and intestine. The presence of the influenza virus was initially demonstrated by a positive serologic hemagglutination-inhibition reaction, with serum standard A' from the pathologic products (intestine, trachea), taken from this case. The immune sera prepared on rats and rabbits confirmed the antigenic character of strain A'.

During passages by different routes (lung, brain) the strain exhibited predominant neurotropic properties, which were constantly maintained during the experiment. These properties were revealed by a shorter period of adaptation, rapid death of the inoculated mice, a more constant positive Hirst reaction and in higher titers for the strain maintained by cerebral route as compared to the strain maintained by pulmonary route.

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The anatomo-pathologic lesions caused by the strain under study, inoculated by intracerebral and pulmonary route, show the presence of the same pathogenic agent, determining influenza lesions with similar characters, in which the vascular element is prevalent. The toxic effects of the strain brought about clinical manifestations (convulsions) and anatomo-pathologic manifestations characterized by hyperemia of the internal organs.

376.- N.CAJAL, N.MANOLIU, N.DRAGANESCU.- Evolution of experimental influenza in mice treated with largactyl. St.cerc. ~~inframicrobiol. microbiol. parazitol.~~, 1957, 8, 4, 561. Largactyl, administered in experimental influenza in mice, prolongs the period of incubation of the disease and slightly lowers the mortality rate.

377.- A.DEREVICI. Prenatal anti-influenza prophylaxis in the R.P.R. carried out with an autochthonous vaccine. Report read at the Session of the Institute of Inframicrobiology of the R.P.R. Academy, September 9, 1957.

In order to determine the best period of vaccination for pregnant women, with a view to protecting new-born infants against influenza, investigations were carried out on the anti-influenza HAI antibodies in 57 pregnant women, during the last 2-3 months of pregnancy, vaccinated with an autochthonous anti-influenza obovaccine. A nine-fold increase in the titer of these antibodies is observed two weeks after vaccination; two months after vaccination, the titers begin to decrease, presenting only six-fold values and returning almost to the initial titer after about 3 1/2 months. In the group of pregnant women which had received approximately 2 months previously tetanic anatoxin, higher antibody values were obtained than in the women vaccinated only against influenza,

As regards the correlation between maternal antibodies and those of the new-born infants, examined in three different groups, according to the interval between vaccination and parturition, it results that for each group a fairly

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close coincidence exists between the titers of the maternal antibodies and those of the child. It likewise resulted that the best period of vaccination for pregnant women, with a view to protecting the child, is approximately 10-45 days before parturition.

378.- A.DEREVICI, A.BRONITKI, A.PETRESCU. Investigations on the problem of influenza virus carriers. Report read at the Session of the Institute of Inframicrobiology of the R.P.R. Academy, April 29, 1957.

In view of isolating the influenza virus in non-epidemic periods, hemagglutination tests were performed with the naso-pharyngeal washings of two groups of persons, with or without respiratory manifestations.

In the first category, without respiratory manifestations, which included 120 persons, hemagglutination was negative in the naso-pharyngeal washings examined directly; similar results were obtained with the allantoic fluids from eggs inoculated with these washings, submitted to concentration with human red blood cells (3-5 passages).

In the second group of patients with respiratory manifestations, forming part of various collectivities with a total of 1,900 persons, only 3 positive hemagglutinations were obtained with the naso-pharyngeal washings.

Inoculation to embryonated eggs of some of the naso-pharyngeal washings yielded negative hemagglutination reactions.

Serum hemagglutinating antibodies were positive in 8 patients with respiratory manifestations; a dynamic increase was observed (3-4 fold) in three of these patients, which made it possible to establish the influenza etiology although it was not possible to isolate the influenza virus.

It is probable that the virus from the naso-pharyngeal washings is masked during the non-epidemic periods or that the phenomenon of reciprocal interference intervenes.

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379.- A.DEREVICI, AL.BRONITKI. Application of a cytologic method for the rapid diagnosis of influenza in the 1957 summer epidemic in the R.P.R. Report read at the Session of the Institute of Inframicrobiology of the R.P.R.Academy, July 18, 1957.

The authors applied the Cateigne cytologic method in the examination of tracheal washings in mice inoculated with the products from persons suspect of influenza.

The cytologic aspects, specific of influenza, found in the cells of the respiratory tract of the mice, 48-72 hours after infection, make it possible to extend this simple and rapid method to the speciality laboratories in view of obtaining an accurate and swift diagnosis of influenza.

380.- A.DEREVICI, A.PETRESCU, A.BRONITKI, D.SARATEANU, N.DRAGANESCU. Comparative study of the dynamics of serum anti-influenza antibodies and of influenza strains in the R.P.R. During the 1954 - 1955 period. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 1, 39.

The titer of serum HAI antibodies was investigated at three months interval, by means of survey tests. Comparison of the mean values showed that the curves of antibodies A obtained in 1954 - 1955 showed a disjunction between the curves of antibodies A', which ran parallel during the two years of investigation, and the curves of antibodies B, which ran parallel at the beginning, but showed a marked tendency to rise during the last quarter of 1955, particularly in the towns close to the USSR, where an influenza type B epidemic was reported.

A comparative study of the strains isolated during these two years likewise showed that there exists no difference between them as regards adaptability and virulence for mice; the number of pathologic products isolated was however greater in 1955. The isolated strains belonged to type A, having also antigenic A' formations with the exception of one strain type A' which exhibited prevalent neurotropic properties.

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381.- A.DEREVICI, A.PETRESCU, A.BRONITKI. Variability in nature of the influenza virus strains studied in the R.P.R. in the 1953 - 1955 period. St.cerc.inframicrobiol., microbiol., parazitol., 1957, 8, 2, 173.

A comparative study of the influenza virus strains isolated in the R.P.R. in 1953, 1954, 1955 and these strains and the standard A/PR₈, A'/FM 1 and B/Lee strains was carried out.

The strains present a complex antigenic structure belonging prevalently to type A, but having also fractions A' and B, more accentuated in the group of strains isolated in 1954. The biologic properties (adaptability to mice, virulence, interval of time until death of the animal supervenes) were more evident in the strains isolated during the epidemic period, as compared to those isolated during the inter-epidemic period.

Investigation of the evolution (every 3 months) of the serum HAI antibody titers showed that this titer, which reflects the anti-influenza reactor rate of the population, was modified parallel to variation of the antigenic structure of the isolated strain.

382.- A.DEREVICI, A.PETRESCU, A.BRONITKI, D.SARATEANU. Biologic characteristics of the influenza virus strains isolated in the R.P.R. in 1956. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 3, 349.

The biologic properties of the influenza virus strains isolated in the R.P.R. in 1956, are investigated in comparison with those found in the previous years, showing that from the points of view of adaptability, induced morbidity, virulence, HA potential and induced histopathologic lesions, the strains isolated in 1956 resemble those isolated in non-epidemic periods and differ from the strains isolated in the epidemic period by a decrease of the biologic properties investigated.

Dynamics of the serum HAI antibodies show an increase

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for type A, corresponding to type A of the strains isolated in field-work, which demonstrates that immunization of the ~~population~~ takes place especially against the predominant strain.

Antibodies A' give very low indexes, reflecting the disappearance of the A' fraction from the antigenic complex of the previously isolated strains. The reactor rate to virus B shows a significant increase, more evident than in 1955, particularly in the towns in the North-East of the country, close to the USSR, in which type B epidemics were reported.

383.- A.DEREVICI, D.SARATEANU, A.PETRESCU, A.BRONITKI.

Laboratory investigations on the 1957 Influenza epidemic in the R.P.R. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 4, 507.

During the summer influenza epidemic, a series of strains belonging to type A, having antigenic fractions common with the strains isolated in the R.P.R. during the 1953-1954 epidemic and with strain A (Asia) 1957 were isolated on embryonated eggs. These investigations showed the absence of a good adaptation of the isolated strains to mice, it being necessary to passage the mouse products on embryonated eggs in order to establish the presence of the virus.

Serologic investigations in patients during the acute phase of the disease and during convalescence revealed a dynamic increase of serum HAI antibodies, especially for the A/PR₈ strain, as compared to the 1957 strain (Asia),

The leukocyte counts performed in the same patients during the acute phase, showed a smaller number of white blood cells (an average 5,069 elements/cmm) than during convalescence (an average 6,159 elements/cmm) and an increase of lymphocytes of 22 - 44 %.

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384.- G.MARINESCU. On meningoencephalitis of influenza origin. (Anatomo-clinical and experimental investigations. The Third Congress of Clinical Biology, Bruxelles, July 14-20, 1957.

An anatomo-pathologic study of the central nervous system was carried out on 25 breast-fed and small infants with nervous manifestations, that died of various forms of influenza, and on 232 mice and rats of various ages, inoculated with a pneumotropic influenza virus on the one hand, and on the other with the same virus associated to certain pathogenic bacteria (*haemophilus influenzae*, *pneumococcus* and *staphilococcus*), by intranasal or intracerebral route, in various dilutions.

Hemorrhagic and degenerative lesions were frequently observed in the toxic forms of influenza in mice and baby-mice, inoculated with large doses of influenza virus, whereas the inflammatory reactions (perivascular infiltrations, gliosis) were observed in the purely nervous forms, in the forms associated to pulmonary lesions and in mice inoculated with the influenza virus associated to bacteria. Perivascular and pericellular oedema was observed especially in baby-mice. The pathogenic mechanism of nervous manifestations in most influenza cases in breast-fed and small infants is accounted for by the direct toxic action of the influenza virus upon the capillary endothelium at first, and then upon the nervous cell; anoxemia following vascular disturbances contributes to the secondary nervous signs. Multiplication of the influenza virus in the nervous cell or actual neurotropism has not yet been demonstrated, although it seems possible.

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385.- I.MIRZA-EMINET, A.PICOS, AL.PETRESCU, AL.BRONITKI.

The role of cortical reactivity in the course of anti-influenza immunization in white mice. St.cerc.inframicrobiol., microbiol., parazitol., 1957, 8, 2, 191.

Investigations were carried out on a group of mice, in whom motor-alimentary conditioned reflexes had been elaborated. This group was subsequently vaccinated with the anti-influenza vaccine. After vaccination, modification of the conditioned reflex activity was observed, manifested by periodic alternation of predominantly excitation phases and predominantly inhibition phases. No modifications appeared in the controls. These disturbances were slighter than those observed in previous investigations, in which the animals had been inoculated with non-attenuated influenza virus. It is concluded that the law of intensity known in physiology is also applicable in immunology. The above mentioned disturbances appear sooner in animals with a lively temperament, than in those with a phlegmatic character, in which they appear later.

386.I.MIRZA, P.ATHANASIU-STROESCU, AL.PETRESCU, AL.BRONITKI

386.- Study of anti-influenza immunogenesis in white rats with various types of nervous system, carried out by means of the hemagglutination-inhibition test and the method of conditioned reflexes. St.cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 4, 587.

Rev.Sci.Med., 1959, 4, 61.

A study was carried out on the reactivity of animals in connection with the nervous system type. A number of animals, in whom motor-alimentary conditioned reflexes had been elaborated, were inoculated with the anti-influenza vaccine or with the influenza virus. Inoculation of the vaccine or of the active virus causes an accentuation of the inhibition process, more intense and persistent in the animals of phlegmatic type, more discrete or of shorter duration in animals of the choleric type.

After vaccination, hemagglutination-inhibiting antibodies do not appear in animals of the phlegmatic type and are

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to be found in low titers however, in the animals of choleric type. After inoculation with the active virus, the titer is somewhat increased, but the same ratio is maintained between the choleric and the phlegmatic types. Booster doses, performed 11 weeks later, wipe out these differences between the two different types of the nervous system.

387.- D.SARATEANU, B.FUHRER. Study of anti-influenza immunity in previously anti-vaccinia immunized animals. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8 2, 207. - Rev. Sci. Med., 1958, 3, 125.

The evolution of the anti-influenza and anti-vaccinia antibody titers in animals previously immunized against vaccinia and subsequently vaccinated with the influenza virus was investigated and it was shown that the anti-influenza antibody titer is much higher in the animals immunized only against influenza, the increase of anti-vaccinia antibodies being moderate.

Inoculation of normal allantoic fluid to animals immunized or not against vaccinia did not give rise to an increase of anti-influenza antibodies beyond the figures to be found as a rule in normal rabbits. The same results were obtained for antivaccinia antibodies. The method can be employed for preparation of hyperimmune anti-influenza sera.

388.- D.SARATEANU, N.DRAGANESCU. Comparative study of certain serologic methods used in the diagnosis of influenza. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 3, 369.

The results obtained by means of the complement fixation, hemagglutination-inhibition and precipitation tests for the diagnosis of influenza are studied.

The complement fixation test runs almost parallel to the percentage of positive reactions obtained with the hemagglutination-inhibition test, but differs to a certain extent from the precipitation reaction.

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Cold complement fixation tests yielded a higher percentage of positive reactions and higher titers than the hot tests.

The quality of the antigen plays an important part, the more concentrated and pure is the antigen the higher is the percentage of positive results.

389.- A.VISAN, C.SATMARI, J.PETRUSCA, AL.STANCU, AL.BRONIT-KI, M.PIROGOFF, S.GUNA. Contribution of the study of the efficacy of anti-influenza vaccines. St.cerc.inframicrobiol., microbiol., parazitol., 1957,8,1,57.

In the winter of 1954 - 1955, a period without any influenza epidemic, a series of anti-influenza vaccinations were performed with a polyvalent vaccine (German Democratic Republic), applied by subcutaneous route in 1,000 cases, and a monovalent vaccine (Institute of Inframicrobiology, Bucharest), applied by subcutaneous route in 100 cases and intranasal route in 50 cases. The efficacy of the vaccine was checked by control of morbidity from influenza and acute catarrh and by serologic tests, which showed a decrease of morbidity and dynamic increase of HAI antibodies, similar in both vaccines, but more accentuated in the case of intranasal administration.

The control group, which had received the foreign protein, likewise showed a non-specific increase of the HAI antibody titers, more accentuated in the case of intranasal administration, the curve plotted indicating, however, lower values than in the vaccinated groups (residual reaction).

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390.- P.ATHANASIU-STROESCU, AL.PETRESCU and M.POPA. -

Biologic variations of an influenza virus strain cultivated in white mice during infection with the street rabies virus. - Giornali di Microbiol., 1958, 6, 43. St.cerc. inframicrobiol., 1959, 10, 2, 77.

Experimental variation of certain influenza virus

strains was obtained following cultivation in mice, previously infected with sublethal doses of street rabies virus. The influenza virus strain, prevalently adapted to the embryonated egg and slightly pathogenic for normal white mice, rapidly loses its pathogenicity when passaged in series on this animal. At the same time, its hemagglutinating antigenic and, to a lesser extent, immunogenic potential disappear. If, however, the passages are performed in mice previously injected with sublethal doses of street rabies virus, the influenza virus strain not only maintains its pathogenicity, but even increases it together with its hemagglutinating, antigenic and immunogenic potential. These "hypertrophic" properties are maintained even when the new variety of influenza virus is passaged only on normal mice.

391.- Y.COPELOVICI.- The evolution of hemagglutinininhibiting antibodies in rats inoculated with the influenza virus and subjected to the action of cortisone. St.cerc.inframicrobiol., microbiol., parazitolo., 1958, 2, 4, 455.

A study was carried out on the evolution of hemagglutinating antibodies in rats infected with the influenza virus and subjected to the action of cortisone. The hormone was administered in 4 mgr amounts per kilogram body weight, for several days, before and after intraperitoneal inoculation of influenza virus type A.

As a rule, lower values were found in the HAI test in the cortisone treated animals than in the untreated controls; the variation varied according to the amount of hormone and the moment of its administration.

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The lowest titers were found in the animals that has received the hormone for 8 days before and 8 days after inoculation of the influenza virus.

A delay in the appearance of HAI antibodies was observed in the animals that had received cortisone a longer period of time.

392.- G.DANESCU-POPESCU, N.CAJAL.- Cultivation of the influenza virus on embryonated eggs under the action of vitamin C. Symposium on the 1957-1958 influenza epidemic. Bucharest, 4-5 December 1958.

In the course of investigations on the influence of vitamins on the development of the influenza virus, a study was carried out on evolution of influenza hemagglutinins in embryonated eggs under the action of vitamin C.

Seven experiments were carried out on 82 ten-day old embryos with the influenza virus type A (strain T), in constant 1/10,000 dilutions.

The virus was inoculated in the allantoic cavity, two hours after introduction by the same route of 0.05 ml 10 % vitamin C solution (sodium ascorbate).

After infection, the embryos were maintained 48 hours at +37°C and then frozen and the embryonic fluid used as antigen in the HA test.

Except for two experiments, in which no significant differences were observed, the other five experiments showed that vitamin C, in the doses used, favours multiplication of the influenza virus.

393.- G.DANESCU-POPESCU, N.CAJAL. The action of vitamin PP on influenza virus cultures in embryonated eggs. Report read at the Symposium on the 1957-1958 influenza epidemic. Bucharest, 4-5 December, 1958.

In the course of investigations on the influence of certain vitamins on the development of viruses, a study was carried out on the action of vitamin PP on influenza virus cultures in embryonated eggs.

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influenza virus A and more seldom A₁ and B₁ in the 1957 pandemic, a new strain appeared A/Asia/1957 or A₂, against which the population was not immunized. Some of the strains of this type had a different antigenic structure, i.e. they could not be adapted to mice, they showed a slighter avidity for hen red blood cells and a weaker antigenicity.

The report outlines the best measures of non-specific prophylaxis; as for specific prophylaxis, the author describes the favourable results obtained by intranasal vaccination in the USSR and the R.P.R., the morbidity rate decreasing approximately 3 to 4 fold.

Emphasis is laid on the use in the R.P.R. of anti-influenza sero-prophylaxis and ~~es~~otherapy, widely applied in the USSR.

396.- A.DEREVICI, A.PETRESCU, A.BRONITKI.- Certain aspects linked to the epidemiology and ecology of the 1957 summer influenza in the R.P.R. St.cerc. inframicrobiol., microbiol., parazitol., 1958, 9, 1, 21.

The research-work on the influenza strains isolated in the R.P.R. in 1953 and 1957 established the natural variability of these strains.

In 1957, during the summer epidemic, a number of strains were isolated in embryonated eggs, revealing antigenic fractions common with these isolated in the previous years and a new fraction common with that of strain A.(Asia) 1957. Certain autochthonous strains were in the " Q " phase, according to Van der Veen's classification.

Increase of inhibitors in the naso-pharyngeal and salivary secretion was conversely proportional to the influenza virus in these products and directly proportional to the specific serum antibodies.

The present paper also shows the dynamics of serum HAI antibodies, followed up during the 1953 - 1957 period.

These data, viewed from an ecologic stand-point might

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In two consecutive experiments, 60 chick embryos were injected with 0.05 ml vitamin PP solution and infected 2 hours later by the same route with a 1/10,000 dilution of the influenza virus type A (strain T) in distilled water. For each experiment, 6 groups of eggs were used, of which 1 control group and the other 5 treated with different doses of vitamin PP (0.00075 ml, 0.00045 ml, 0.0003 ml, 0.00015 ml).

The results of the two experiments showed that the addition of vitamin PP definitely favours cultivation of the influenza virus in the embryonated egg, assessed by the hemagglutinin titer. The greatest differences in comparison with the controls were obtained in the group which received 0.0015 ml vitamin PP (1/17,280 as compared to 1/4, 140).

394.- A.DEREVICI. Some data on human influenza. Analele Romino-Sovietice, Ser.Med., 1958, 147, 12.

A brief history is given of the works published on the relations between the influenza virus in nature and the human organism, stressing the importance of non-specific inhibitors, the phenomenon of interference and the possible intervention of viroforia, considered by Zilber as one of the modes of persistence of the influenza virus in nature.

A list is given of the factors that interfere in the variability of the influenza virus. Based on the results obtained by anti-influenza vaccination an outline is given of the prophylactic measures to be taken.

395.- A.DEREVICI. The 1957-1958 epidemic influenza virus.

Report read at the Symposium on the 1957-1958 influenza epidemic. Bucharest, 4-5 December 1958.

The first part of the work gives a classification of respiratory syndromes, followed by a history of pandemic influenza, stress being laid on its spread and evolution in successive outbreaks.

Until 1957, the etiologic agent usually found was

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furnish certain information on influenza virus carriers and the proportion of persons susceptible to influenza.

397.- A.DEREVICI, A.PETRESCU, A.BRONITKI, C.SAFARI, I.PETRUS-
CA, I.POPA, A.BOIU. Specific anti-influenza prophylaxis
with autochthonous vaccines in 1956-1957, St. cerc. infra-
microbiol., microbiol., parazitol., 1958, 9, 2, 125.
pp.175-185.

During 1956-1957, experiments were carried out with the autochthonous anti-influenza ovovaccine in a small group of persons. The polyvalent vaccine with influenza strains type A and B, inoculated by intranasal route, induced an increase of antibodies that reached a peak 14 days after vaccination.

The use of certain strains A with a wide antigenic spectrum, isolated in our country during an epidemic, led to a decrease of the morbidity rate during the 1957 epidemic, caused by the influenza virus strain A (Asia) 1957.

A decrease in the influenza morbidity rate was also obtained with the vaccine prepared with strain A (Asia) 1957, fact which reveals the immunogenic properties of this strain, although the titer of the hemagglutino-inhibiting antibodies in this group of vaccinated persons was not very high.

398.- A.DEREVICI, A.BRONITKI and A.PETRESCU. Immunogenic
value of some purified anti-influenza vaccines
(experimental study). Comunicările Acad.R.P.R. 1958
t. III, 2031 103-109(5 tab.).

In order to obtain swiftly an anti-influenza ovovaccine with a high immunogenic potential and a minimum amount of proteins, the authors investigated comparatively a series of ovovaccines prepared in the closed-circuit type Derevici apparatus, applying various procedures: cold (+4°C) adsorption on the embryo red blood cells, hot (37°C) elution in a buffer phosphate solution or in 9 % or 5 % chloruro-sodium solution, with or without addition of 10 % vitellus and 15 % saccharose, maintained in a fluid or lyophilised state.

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From the experiments carried out it may be seen that the best results are obtained by preparation of a formol-vaccine (0,5%), prepared from the allantoic fluid by adsorption of the embryo red blood cells, elution in a buffered phosphate solution at 37°C during 2 hours and preservation in a fluid state.

Thus prepared the ovovaccine maintains its value during 6 months. Its duration with time is under study.

399.- M.DRAGANESCU, E.IOAN, C.OANA, A.BOTAN, I.SABARESSE, F.RUSU, I.TUDOR, G.HURDUC. The dynamics of anti-influenza serum antibodies in persons vaccinated with adsorbed ovovaccine. Revista Medico-chirurgicale, Iasi, 1958, 2, 337.

A study was carried out in restricted groups, on the immunogenic value of a phosphate adsorbed anti-influenza ovovaccine. Analysis of the results shows a marked increase of anti-influenza serum antibodies 14 days after vaccination followed by a sudden diminution after 2 months; 4 months later, the antibody titer decreases below the values found before vaccination. The controls showed an increase of anti-influenza antibodies in the same period and no mean values inferior to those of the vaccinated persons. This fact may be attributed to an occult immunization of the controls, who had contracted a discrete disease or to an eventual outbreak of influenza, that appeared at that time in the vaccinated collectivities.

400.- H.LACK, A.LITMAN, AL.BRONITKI.- Certain clinical aspects of the 1957-1958 influenza epidemic. - Symposium on the 1957-1958 influenza epidemic. Bucharest, 4-5 December 1958.

During 1957 and 1958, 125 patients with influenza were admitted to the " Casa Scintei Hospital ". These cases were characterized by a sudden onset (80% of the cases) with the aspect of a toxic-infectious disease, in which the general and sometimes very severe phenomena predominated the local phenomena (52%); as a rule, the few complications that appeared were more frequent at the level of the respiratory

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apparatus.

After 1-2 days, ~~intense pharyngitis + tonsillitis~~ phenomena appeared (70%) characteristic of influenza; the disease was sometimes accompanied by nervous phenomena, low blood pressure, bradycardia. In 9 % of the cases, exacerbations were observed and in 5 % relapses.

Laboratory examinations showed an increased sedimentation rate in 67 % of the cases, a slight increase in the number of leukocytes without significant shift of the leukocyte count.

The 55 serum hemagglutination-inhibition tests performed showed a fairly high percentage of positive results for the epidemic strains type A₂, isolated in the R.P.R. during the summer influenza epidemic (66%) and for standard strain A (75 %).

The authors recommend a non-specific treatment aiding the reactivity of the organism. They stress the importance of specific prophylaxis and believe it is necessary to create centers of diagnosis.

401.- G. MARINESCU . Recent Soviet achievements in the field of influenza. Symposium on the 1957-1958 influenza epidemic. Bucharest, December 4-5, 1958.

The present paper is a general review of the latest Soviet investigations in the field of influenza, linked to problems of typology, pathogeny, clinic, diagnosis, treatment and specific means of combatting the disease. The various methods of preparation and administration of anti-influenza vaccine and sera are described in detail. Stress is laid on the efficacy of certain organization procedures and collaboration between the various medical specialities in the control of influenza.

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- 402.- G.MARINESCU, M.STARK, I.TAINDEL, J.CUCIUREANU, C.STROESCU and T.SANDULESCU. Acute influenza myopathy followed by recovery. Third Conference of Influenza, enza, Kiev, September 25-27, 1958. Symposium on the 1957-1958 influenza epidemic, Bucharest, December 4-5 1958.

The existence of acute curable myopathies in the course of influenza are reported.

The etiologic diagnosis was based on the progressive increase in high titers of influenza hemagglutino-inhibiting antibodies (A/Asia 1957), on the epidemiologic factor and on the absence of Coxsackie and poliomyelitis viruses in the effluents of the patients admitted to hospital as poliomyelitis suspects.

The appearance of these complications seems to be linked to neuro-vascular disturbances at the level of the muscles.

- 403.- G.MARINESCU, D.SARATEANU, E.NASTAC, E.OPRESCU B.FUHRER. Investigations on the behaviour of white mice following inoculation of influenza and Coxsackie viruses (Preliminary data). Symposium on the 1957-1958 epidemic influenza, Bucharest, December 4-5, 1958

With a view to studying the influence of the Coxsackie virus on the evolution of experimental influenza, 17 groups of adult white mice, totaling 85 animals, divided into 4 groups, were inoculated.

The animals were first inoculated with massive doses of Coxsackie virus A₆ (1,000; 10,000 and 100,000 LD₅₀) by intramuscular or intranasal route and after 48 hours they were again inoculated only by intranasal route, either with the influenza virus non-pathogenic for mice isolated from the Asiatic influenza epidemic in our country (A/S 4/57) or with the influenza virus pathogenic for mice (A/T 53).

The results of the experiments showed that inoculation of the Coxsackie virus does not aggravate the clinical and histologic picture obtained by subsequent inocu-

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lation of the influenza virus, but on the contrary, reduces the mortality rate among the animals.

This experimental fact can be accounted for by a phenomenon of paraimmunity, by a phenomenon of interference or by both phenomena.

404.- G. MARINESCU, C. TAINDEL, I. PREDESCU, M. STARK, M. CONSTANTINESCU, T. SANDULESCU. Influenza facial paralysis. Third Influenza Conference, Kiev, September 25-27, 1958, in Symposium on the 1957-1958 influenza epidemic. Bucharest, December 4-5, 1958.

A description is given of the clinical picture and certain laboratory aspects in 10 cases of influenza facial paralysis confirmed by the hemagglutino-inhibition reaction and by the absence of the poliomyelitis virus in the ~~feces~~ of the patients, admitted to hospital as poliomyelitis suspects.

Pathogeny of facial neuritis seems to consist in local cerebral vascular disturbances with secondary oedematous lesions (anoxia alterations) in the nuclei and fibers of the facial nerve.

405.- M. MINCULESCU, D. TARCHILA, D. MENDE, G. CURTEANU, I. VLAD. Anti-influenza vaccination of a group of town children (0-3 years) with an autochthonous vaccine. Symposium on the 1957-1958 influenza epidemic. Bucharest. December 4-5, 1958.

Vaccination of a group of small infants and children with an autochthonous vaccine, gave rise to high titers of the anti-influenza hemagglutino-inhibiting serum antibodies type A, A₁ and B, 2 weeks after vaccination, titer which stayed level up to 2 months, but which after 5 months decreased, almost reaching the values from before vaccination. The investigations show that no differences exist in the formation of antibodies in terms of the age-group.

In the control group, the titers of the antibodies

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remained practically non-modified during the 5 months in which the children were followed-up.

406.-ACAD.ST.S.NICOLAU, A.DEREVICI, G.POPESCU. Data on the 1957 influenza epidemic in the Rumanian People's Republic. Report presented at the Third Unional Influenza Conference Kiew, 25-27 September 1958.

The 1957 influenza pandemic swept over the country in two epidemic waves in summer 1958.

The virus strain isolated was similar to the Singapore strain; it was readily cultivated in embryonated eggs but not in mice.

The polyvalent vaccine prepared with autochthonous type A strains and with a Hungarian B strain conferred a fairly high protection against the Asiatic virus.

Serologic control of the vaccinated individuals showed a sixfold increase of hemagglutinin-inhibiting antibodies.

Good results were also obtained with a vaccine prepared with strain A₂ isolated in the first epidemic wave, the morbidity in vaccinated persons being four times lower than in controls.

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407.-AL.PETRESCU and P.ATHANASIU-STROESCU. Histo-chemical study of muscular and hepatic glycogen in the course of experimental influenza in white mice. Comunicările Acad.R.P.R. 1958, 8, 1201, 1201-1205.

The fact that one of the most characteristic symptoms of influenza is adynamia, led to investigation of muscular and hepatic glycogen in the course of this disease. They made use of histo-chemical methods. It was found that in the course of influenza, hepatic glycogen is present in large amounts in the sacrificed animals, in which the pulmonary lesions were moderate. In the dying animals or in those which died from influenza, hepatic glycogen is greatly decreased or even absent and the pulmonary lesions are severe.

Muscular glycogen decreases in the first 72 hours after infection, then disappears altogether. Hepatic bio-

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punctures showed a slight decrease of hepatic glycogen in the first 24 hours after inoculation of the influenza virus.

408.- AL.PETRESCU and A.DEREVICI. Histo-chemical study of the distribution in the body of the white mouse of nickel contained in a metallo-protein anti-influenza vaccine. Comunicările Acad.R.P.R. 1958, t. XVIII, no. 11, pp. 1217-1220.

Use was made of an anti-influenza vaccine prepared with the allantoic fluid of an embryonated egg infected with the influenza virus, and precipitated in a virulent suspension with nickel, a metal which has an attenuated effect on the virus. The protection coefficient given by this metallo-protein complex, administered by nasal route to mice, was 75 %. Study of the cellular lesions of the tissues from the animals sacrificed at an interval of 24 hours showed that nickel penetrates into the pulmonary parenchyma in the first 24 hours; a part is fixed on the alveolar cells and most of it passes into the blood. After 48 hours, it is to be found in all the organs except the brain. The renal lesions counterindicate the use of this complex as a vaccine.

409.- R.PORTOCALA, S.DUMITRESCU and N.I.IONESCU. Morphology of type " A Asia " influenza virus isolated in the R.P.R. St. Cerc. Inf. microbiol., microbiol., parazitol. 1958, t. IX, no. 4, p. 413-415 and Acta Virologica 1959, t. 3, no. 2, p. 113-115.

A strain of the influenza virus " A Asia " isolated in the R.P.R. was studied at the electrone microscope after purification of the elementary corpuscles and concentration by adsorption - elution. The filamentous forms were prevalent at the first passages. The preparations examined revealed incomplete forms of the influenza virus, represented by circular elements with a highly depressed center.

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410.- AL.BRONITKI . Interference between the influenza vaccine virus and the homologous active influenza virus. Report read at the Session of the Youth's Section of the R.P.R. Academy, April 24-26, 1958, Bucharest

A study was carried out on interference between the influenza vaccine virus and the homologous active influenza virus. Mice and embryonated eggs were used in the experiments. The order of application of the vaccine and active virus, the interval of time between the inoculations and the dose of active virus were varied. The best results were obtained in experiments on mice with a 3 days interval between inoculations and with small amounts of active virus. In the embryonated egg, interference was complete only when the first inoculation was done with the vaccine virus, 48 hours before inoculation of a small amount of active virus. The authors consider this to be the best interval of time, since it corresponds to the peak of virus multiplication in the respective organism. At other intervals and with higher virus doses, interference is only partial. It is more definite when a fresh instead of an older virus is used, as well as when the vaccine is applied before the active virus. The infected animals do not present during the first 8 days HAI serum antibodies, considered as an indication of influenza immunity.

The authors therefore emit the hypothesis that the anti-influenza vaccine may be effective also when applied at the beginning of an influenza epidemic, due to interference.

411.- C.SATMARI, A.DEREVICI, AL.PETRESCU, AL.BRONITKI, I.POPA A.STANCU. Immunogenic value of the anti-influenza ovovaccine prepared in closed circuit and tested by serologic and morbidity control. St.cerc. infamicrobiol., microbiol., parazitol., 1958, 2, 1 75-75, 6 diagramms.

A study was carried out on the immunogenic value of anti-influenza ovovaccine, purified and concentrated in

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the closed circuit apparatus, type Derevici, by means of serologic (231 vaccinated persons and 215 controls) and morbidity control trials (521 vaccinated persons and 874 controls). Intranasal vaccination was performed in 6 adult collectivities (20-25 years old) in April-May 1956. The results showed that the best vaccination dosis is 0.5 cc.

An increase of serum HAI antibodies was noted, particularly of vaccine homologous antibodies; similarly the morbidity rate controlled over a period of 8 months was almost nil, apart from two collectivities, in which a morbidity rate of 1.75 per cent and 2.86 per cent was reported. Morbidity ranged in the controls from 0.5 to 8.84 per cent.

During the post-vaccinal period, the morbidity index was very low after the HAI antibody titers had returned to the values found before vaccination. This goes to demonstrate the tissular nature of immunity also in influenza, as postulated by Acad. St. S. Nicolau for other viral diseases.

412.- G. SATMARI, AL. PETRESCU, I. POPA, C. HONDOR, N. MUNTIU, and FLECHNER. Experimental investigations on immune serum from horses vaccinated with strain A(Asia)1957. Symposium on the 1957-1958 influenza epidemic, Bucharest, December 4-5, 1958.

An anti-influenza serum was prepared in horses, using as antigen an influenza virus eluate purified and concentrated 10 times. The serum has a high HAI, neutralizing and complement fixing titer; it is strictly specific and does not protect against heterologous virus strains.

413.- E. SORU, A. DEREVICI, AL. PETRESCU and AL. BRONITKI. Study of some influenza virus strains isolated in the R.P.R. During the 1957 epidemic by means of chemical, biophysical, cytologic and serologic methods. St. cerc. inframicrobiol., microbiol., parazitol., 1958, 2, 3, 323.

A study carried out by the chromatographic method on the chemical structure of the influenza virus isolated

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in the 1957 epidemic, showed the quantitative difference in amino-acids as compared to the results obtained with the PR.8 and Lee viruses by Knight.

Study of the toxicity of some influenza virus strains by the Tarusov method showed the unequal toxicity of the different strains.

The influenza virus strains isolated in our country during the 1957 epidemic belonged to type A (Asia) 1957; the antigenicity of some of the strains was very low, which was accounted for by the fact that they were to be found in the "Q" phase.

414.- D.TARCHILA, AL.BRONITKI, AL.PETRESCU and S.CIRNARU.
Isolation of an influenza virus strain type D in Bucharest. St.cerc. inframicrobiol., microbiol., parazit. 1958, 9, 2, 187.

Two strains of the influenza virus type D were isolated from the lung of small infants who died following influenza with severe interstitial pneumonia. The virus was isolated on white mice and embryonated eggs. Typing of the isolated virus was done by means of the hemagglutination-inhibiting test performed with sera of type A/PR.8; A'/FM, B/Lee, A/Asia 1957, A/T 1953 and D as well as with normal rat serum (serum C). The hemagglutination-inhibition reaction was negative with all the sera, except anti-D serum (1/160-1/320). The virus isolated in the R.P.R. forms part of the same family of influenza viruses (type D strain) as those found in Japan and the USSR.

415.- ~~PROR~~ Dr. M.VOICULESCU, G.MARINESCU and I.PREDESCU
Clinical aspects of meningo-encephalitis in the course of the 1957-1958 influenza epidemic. Symposium on the 1957-1958 influenza epidemic, Bucharest, December 4-5, 1958.

Twenty-five cases of meningo-encephalitis out of forty-four cases of cerebral complications observed in the course of the 1957-1958 influenza epidemic, due to the

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Asiatic A virus strain, from a total of 346 children hospitalized with a diagnosis of influenza, were confirmed serologically (the Hirst test).

In most cases, these nervous determinations were slight. Thirteen cases of serous meningitis were reported, 7 cases with encephalitis (2 of which with convulsions and one with hemiparesis) and 5 cases with a complete meningo-encephalitis picture. As a rule, the clinical signs disappeared completely after 1-2 weeks of evolution.

416.- M.VOICULESCU, G.MARINESCU, I.PREDESCU et al. Clinical forms of the 1957/1958 influenza epidemic in children and adults. Symposium on the 1957/1958 influenza epidemic. Bucharest, December 4-5, 1958.

The young age-groups and especially children under 5, adolescents and youths were prevalently affected during the 1957/1958 influenza epidemic. The old age group was seldom affected, a characteristic of the epidemic, also reported by other authors and which might support the hypothesis of the relation of the actual epidemic with the 1889 epidemic in which this latter group acquired specific antibodies.

A prevalent benign evolution is observed both in adults and children, the mortality rate ranging between 0.2-0.6 per cent in hospitalized patients.

The clinical particularities observed were the presence of a moderate catarrhal syndrome, the intense but not exceptionally severe general symptoms and a higher proportion of gastrointestinal disturbances than in other epidemics.

Complications were more frequent in children (58,4 per cent) and old persons (46,8 per cent) than in adults (27 per cent). Severity of influenza croup in infants and staphylococcal pneumonia at all ages were reported.

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417.- M.VOICULESCU and G.MARINESCU. Acute transverse influenza myelitis. Symposium on the 1957-1958 influenza epidemic. Bucharest, December 4-5, 1958.

The authors describe the clinical picture of a case of acute transverse myelitis, with medullar section syndrome accompanied by curable azotemia and nephritis. (ureea 3 gm%).

The authors describe the pathogeny of this complication insisting upon the ~~neuro~~-vascular mechanism; the pathogeny of renal manifestations is connected with the vascular influenza glomerular lesions, irritation of the vegetative nervous system, medullar lesions, loss of salt and electrolytes by abundant perspiration and failure of hydric and protein supply. An adequate diet and therapy resulted in total disappearance of the renal signs.

The HAI test for influenza showed the progressive appearance of a very high titer of the HAI antibodies for the influenza virus type A (1/10,240).

418.-P.ATHANASIU, AL.PETRESCU, M.GRUIA and D.SARATEANU
Biologic modifications of some influenza virus strains cultivated in anti-rabies vaccinated mice. st. cerc.
Aframicrobiol., 1959, 10, 2, 213-218.- Giornali di microbiol., 1959, 7, 2, 105.

An increase in the pathogenicity of an influenza virus strain is obtained following its cultivation in mice undergoing anti-rabies immunization. This increase may be observed in its immunogenic potential. Passage of the same strain, only once, on anti-rabies immunized mice results in attenuation of its pathogenicity. The results fully agree with those obtained in previous works on controlled variability. It is possible that the same phenomena occur also in nature, since a single passage through organisms with a modified reactivity, or through organisms less sensitive than usual, may determine lasting modifications of the biologic properties of the virus.

419.- AL.BRONITKI, YOLANDA COPELOBICI, MIGNON GRUIA.

The behaviour in eggs and laboratory animals of the influenza strains isolated during the February 1959 epidemic. "Gripa" Date asupra epidemiei din 1959
Ed. Med. 1959, 108.

The influenza strains isolated during this epidemic period are studied from the point of view of their adaptability to the embryonated egg and mouse, the hemagglutinating (HA) and hemagglutinin-inhibiting (HAI) properties, the type to which they belong and their behaviour in the embryo. The results show prevalent adaptability to the embryonated egg and low adaptability for mice. The HA and HAI titers ranged between 1/80 and 1/2560. The isolated strains belong to groups A, A₂ and the mixed group A + A₂ and have no toxic potential. The ED_{50} varies from $10^{-2.682}$ to $10^{-5.5}$. The appearance of the mixed strains A + A₂, considered as transition strains between types A and A₂, is discussed.

420.- AL.BRONITKI, AL.PETRESCU, P.ATHANASIU. Investigations on the problem of "healthy" influenza virus carriers.
St. cerc. inframicrobiol., 1959, 10, 2, 207.

A strain of influenza virus A/PR₈ was isolated from a "healthy" carrier. No clinical signs of the disease could be observed, neither an increase of the anti-influenza antibodies 12 days after isolation of the virus.

The problem of "healthy" influenza virus carriers is discussed, in view of the possible existence of a biophyte state of the virus or the existence of a virus non-pathogenic for man, pathogenic for the white mouse and embryonated egg. As the virus multiplies exclusively in live cells, it can be stated that the individual from which the strain was isolated is apparently "healthy", but biologically ill.

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421.- N.CAJAL, S.MATEESCU and E.PACURARU. Evolution of experimental influenza in the white mouse treated with radioactive phosphorus (P^{32}). St. cerc. inframicrobiol. 1959, 10, 3, 293.

The evolution of experimental influenza induced by the influenza " T " virus, type A strain, inoculated by intranasal route to mice which had been injected by intraperitoneal route with an isotonic solution of $P^{32}(Na_2HPO_4)$ with an activity of 25 μC , showed that internal irradiation of beta rays emitted by P^{32} increases the susceptibility of animals to infection with the influenza virus. The presence of the virus was tested by means of hemagglutination or by inoculation to mice.

The results obtained proved that internal irradiation with beta rays emitted by radioactive phosphorus (P^{32}) increases the susceptibility of the adult white mouse to influenza. This is reflected by an increase in the number of dead animals for the same virus dose, by a decrease of the period of incubation and a more intense proliferation of the virus in the lungs of the irradiated animals, assessed by biologic titration and hemagglutination reaction, in comparison with the control animals.

These results are due, in the opinion of the authors, to a decrease of the resistance of the animal organism under the action of beta rays, which give rise to an actual " irradiation disease ", similar and even more intense than that produced by X rays.

422.- COPELOVICI, M.CEPLANU, I.SAMUEL and R.CAPRARU. Electrophoretic study of the sera of rats submitted to experimental infection with the influenza virus under the action of cortisone. St. cerc. Inframicrobiol., 1959, 10, 2, 199.

Administration of cortisone during experimental influenza infection in rats, produces, from the electrophoretic view-point, a modification characterised by an initial decrease of gamma globulins, with a subsequent increase; the

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HAI antibodies are lower as compared to the controls.

The parallelism that exists between the titers of the HAI antibodies and the gammaglobulin curve disappears under the action of cortison^e 14 days after administration, when the gammaglobulin values begin to increase, whereas the HAI antibodies decrease. Administration of cortison^e to animals during 7 days, produces modification of the electrophoretic curve of the serum, characterised by an increase of beta-globulins.

423.- A.DEREVICI. A new prototype of sterilizable apparatus permitting the preparation of an anti-influenza ovo-vaccine in closed circuit. St. cerc. Inframicrobiol., 1959, 10, 1, pp. 59-63. Rev. Sci. Med. 1959, 4, 33.

The new prototype of sterilizable apparatus permits preparation of the anti-influenza vaccine in closed-circuit handling conditions, eliminating centrifugation.

The risk of infection is removed due to simplification of the method of separation of red blood cells and the small amount of handling required; the preparation time for the vaccine is almost 4 times shorter.

The main technique used is cold adsorption of the red blood cells of the embryo, on which the influenza virus is cultivated.

Hot elution in formol-treated saline is then performed.

424.- A.DEREVICI, AL.BRONITKI and AL.PETRESCU. Antigenicity of the epidemic influenza virus strains isolated in the R.P.R. in 1957-1958. St. cerc. inframicrobiol., 1959, 10, 2, 155-161.

The antigenicity of the influenza virus strains isolated in the 1957 epidemic is fairly high, titers of the serum HAI antibodies, over 1/320, being found in persons with the occult form of the disease. These high titers did not change and often decreased following anti-influenza vaccination. The controls of these vaccinated persons

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likewise showed increased titers of the anti-influenza HAI antibodies, a fact which pleads for the existence of occult forms of the disease in the former.

Experiments carried out on rats showed a low antigenicity of the strains isolated in 1957, except for strain AP₂ which yielded higher titers. The antigenic spectrum of strain P₄ is wider, giving rise to antibodies also against strains P₂ and S₄. The partially immunized rats, submitted to suprainfection with the attenuated virus, inhibited the serologic response.

455.- A.DEREVICI, AL.BRONITKI, AL.PETRESCU. Antigenic relations between the influenza virus strains isolated in the R.P.R. in 1959 and the strains isolated in the preceding influenza epidemics. Report read at the Session of the Institute of Immunobiology of the R.P.R. Academy on August 17, 1959.

By analysing the antigenic relations between the influenza virus strains isolated in the 1959 epidemic and the strains isolated in the preceding years, it was possible to establish to what extent the group characteristics were maintained in spite of the variability that supervenes with time.

The analogy of the structure of the Asiatic A₂ strains isolated in 1957 and those isolated in the 1959 epidemic made it possible to use them as vaccination strains, since they exhibited a superior antigenic potential.

The appearance of mixed A + A₂ type of strains suggests the persistence in nature of both types of virus, A and A₂, their recombination leading to the formation of new types of influenza virus.

456.- A.DEREVICI, AL.BRONITKI, AL.PETRESCU. Isolated strains. Identification. Typing. Vol. "Gripa" - Date asupra epidemiei din 1959, Med. 1959, 82.

The influenza virus strains isolated in the 1959 epidemic, contrary to the autochthonous strains isolated in 1953-1957, are non-homogeneous, their antigenic structure

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allowing their classification as strains type A/PR₈, type A₂ and mixed strains A + A₂.

The variability of the strains isolated during these years is shown and demonstrated by crossed hemagglutination-inhibition tests.

The constant changes in the titers of serum hemagglutinating antibodies are likewise shown, particularly a decrease of anti-A₂ HAI antibodies before the beginning of the 1959 epidemic.

427.- A.DEREVICI, AL.BRONITKI, AL.PETRESCU and C.SATMARI
Preventive action of the Rumanian anti-influenza vaccine. "Gripa" Date asupra epidemiei din 1959,
 Ed.Med. Buc., 1959; 161.

The prophylactic activity by means of anti-influenza vaccination started in the R.P.R. in 1954, when experiments were carried out with the anti-influenza vaccine prepared from mouse lung. The prophylactic section of the Institute of Inframicrobiology subsequently prepared a purified ovo-vaccine, with the aid of a special apparatus, built for closed circuit handling, which reduces the time of preparation of the vaccine, administered by intranasal route by means of a sprayer with which the amount introduced can be measured. Application on a wide scale of the vaccine in 1959 was preceded by various restricted vaccinations during 1956, 1957 and 1958.

It was observed that the vaccine prepared with strains type A PR₈ likewise gave protection against the pandemic virus A₂/1957. In the course of the 1959 epidemic, in a group of 3,114 children and 1,907 adults the total average of the protection index was 5.93 when the vaccine was prepared with the same type A₂ strain, isolated however in the 1957 epidemic.

The vaccine applied in the 1959 epidemic acted by interference.

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428.- A.DEREVICI, N.DRAGANESCU. Cultivation of the influenza virus in vitro in a fluid medium. The action of added thymo and ribonucleic acid. Comunicările Acad.R.P.R., 1959, 9, 6, 639.

Cultivation of the influenza virus in vitro in a fluid medium, according to the Lee and Rivers method, was performed with certain modifications consisting in the adding of thymo and ribonucleic acids.

After establishing the best concentration of embryo tissue in Thyrode solution, the effect of various nucleic acid concentrations was studied.

A delay in growth of the virus was observed following the addition of thymonucleic acid and an inhibitory action in the case of ribonucleic acid. These results are attributed to the action on the embryo cells and not directly upon the viruses.

429.- A.DEREVICI, AL.PETRESCU, P.ATHANASIU. Experimental study on the immunogenicity of the influenza virus strains isolated in the R.P.R. in the epidemic and postepidemic periods. Microbiol., parazitol., epidemiol., 1959, 4, 405-409.

The immunogenetic relation between the Asiatic type (A₂) of the influenza virus strain, which caused the 1957 epidemic in our country, and the influenza virus type A/PR₈ isolated in the postepidemic period in 1958 is studied.

The cross immunity tests carried out on mice showed a weak reciprocal protection, which does not correspond to the findings of some authors in connection with the protection conferred to man by vaccines prepared with type A/PR₈ virus against infection with the A₂ epidemic virus.

The experiments carried out on mice demonstrate the advantage of a polyvalent vaccine.

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430.- A.DEREVICI, AL.PETRESCU, AL.BRONITKI. Ecologic problems concerning the influenza virus. The 1957 - 1958 epidemic and the 1958 postepidemic. An.Rom.Sov.Medicina generală, 1959, 3, 35.

During the influenza that appeared in our country in May 1957, the influenza virus type A₂, which caused the pandemic with a starting point in Asia, was isolated. The influenza virus type A/PR₈, temporarily suppressed by the pandemic virus A₂, reappeared after a period of 10 months, partially modified however. The continuous variability suffered in nature by the influenza virus is due to multiple passages through differently immunized organisms. On the other hand the organisms submitted to infection with a new type of virus react not only by the formation of anamnestic antibodies, but by that of specific anti-influenza antibodies.

It should be noted that although certain recently isolated influenza virus strains are weakly antigenic, they are immunogenic, the vaccine prepared with these strains being active.

431.- A.DEREVICI, AL.PETRESCU. The action of the hydrosoluble extract of the royal jelly on the influenza virus. Comunicările Acad.R.P.R., 1959, 2, 12, 1327.

The hydrosoluble fraction of the royal jelly of Apis mellifica has a viricidal action on the influenza virus type A and B, even in 2 mg doses mixed extemporaneously with the virus inoculated on embryonated eggs.

The virus can no longer be recovered after 4 serial passages.

This product is not harmful for the embryos, which attain the hatching stage same as the control embryos.

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432.- A.DEREVICI, AL.PETRESCU. Action of bees' Royal jelly hydrosoluble extract on the influenza and mumps virus and its oncolytic action on Ehrlich ascitic tumors.

Report read at the scientific session of the Institute of Inframicrobiology, September 16, 1959.

Bees' royal jelly hydrosoluble extract has a virucidal effect in vitro on the influenza virus. A 1 mgr amount of extract inactivates in vitro about 100 LD_{50} , it has not however the same effect on the mumps virus, even in higher concentrations. On mouse Ehrlich ascitic carcinoma the extract has an oncolytic action, reducing the number of mitosis, lengthening the period of incubation and diminishing the amount of ascitic fluid.

The mechanism of action of the extract is discussed.

433.- A.DEREVICI, AL.BRONITKI and AL.PETRESCU. Dynamics of the variability of influenza viruses isolated in the R.P.R. from 1954 to 1959. The Conference of Microbiology, September 22, 1959, Budapest.

Three epidemic outbreaks occurred in the R.P.R. in 1953 - 1954, 1957-1958 and 1959. The virus isolated in the first outbreak formed part of type A (PR_8), also containing an antigenic fraction A', extremely pathogenic for mice.

The viruses isolated in 1955 and 1956 form part of type A₁, but with antigenic characters closer to A₁ than the 1953 epidemic virus which was only slightly pathogenic for mice. The virus isolated in 1957-1958 forms part of the Asiatic A₂ type, in phase "Q", non-pathogenic for mice. After this epidemic, viruses type A (PR_8), similar to the 1953 virus, were again isolated.

In 1959 viruses type A (PR_8), type A₂ and strains with mixed A - A₂ components were isolated.

The investigations carried out in the 1954-1959 period show the existence of a ceaseless interplay of forces between the influenza virus and the host organism resulting in a high variability in nature of the influenza virus, endowed with a great capacity of adaptation.

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434.- St.DRAGANESCU, V.PETRESCU-COMAN, FLORICA PAUN, N.DRAGANESCU and A.PETRESCU. Clinical, electroencephalographic and diagnostic aspects of influenza encephalitis in infants and small children. Neurol. psihiat. neurochir. 1959, 3, 225.

The authors studied 3 cases of acute encephalitis in children. The clinical picture was similar in all the cases: fever, unconsciousness, tonic and clonic convulsions. All the children showed signs of generalised hypertonia; in one case bilateral Babinski signs were observed, with myoclonia of the left arm; in another case, phenomena of decerebrated rigidity, ocular paralysis, and labio-facial dyskinesia were noted; in the third case, unilateral facial spasm with hypertonia. Examination of the cerebro-spinal fluid showed in the first case 41 lymphocytes/mm on the second day of the disease.

The electroencephalographic examination showed severe alterations of the encephalitic type, with an almost total absence of reactivity to noise, light and intermittent light in the third patient.

The hemagglutination-inhibition test showed in the first case an increase in the dynamics of influenza antibodies to antigen A(PR₈) from 1/160 to 1/1,280; in the second case, high antibody titers of 1/10,000 to antigen A/57 Asia and of 1/1,280 to influenza A₁ antigen (FM₁). In the third case, the serologic reactions for influenza were negative.

435.- Conf. F.FACON, N.DRAGANESCU, BEATRICE PRUSKAUER - APOSTOL and TR.GEORGESCU. Acute encephalitis during an influenza epidemic (clinical and immunologic study). Neurol., psihiat. neurochir., 1959, 5, 391.

The cases of encephalitis observed in 1959 appeared at the end of the influenza epidemic, which agrees with the hypothesis that exacerbation of the virulence of the influenza virus in widespread epidemics leads to the formation of influenza virus strains with neurotropic properties, able to determine meningo-encephalitis with allergic phenomena in the central nervous system.

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A latent period was observed in all the cases, ranging between 3-14 days, between the catarrhal episode and the appearance of the meningo-encephalitis phenomena, which lend support to the hypothesis of an allergic pathogeny.

The latent, subclinical neurologic disturbances in the antecedents of the patients can be considered as favouring factors in the meningo-encephalitis determination.

In all the cases, a meningeal syndrome was observed with glycorrhachia, fever and an encephalitis syndrome, characterized by pyramidal signs and psychical disturbances; in one patient, the presence of subacute epileptic fits was observed.

As a rule, the neurologic symptoms rapidly regressed and the psychic disturbances alone persisted. The evolution of the immunologic modifications, characterized by the appearance and increase of influenza antibodies, fully justifies the assumption of the influenza etiology of these cases of meningo-encephalitis.

436.- M.GRUIA, G.BALMUS, O.MITROIU, techn. assist.M.Popa
Investigations on certain factors elaborated by
the microbial flora of the nasopharynx, with an in-
hibiting action on the influenza virus in vitro.
 St. cerc. inframicrobiol., 1959, 10, 2, 175.
 - Rev.Sci,Med, 1959, 4, 45.

Starting from the known existence of an interaction between saprophyte germs and biophyte viruses, in the various natural cavities in man, it is proposed to verify if the germs of the naso-pharynx are capable of elaborating, in artificial culture media, certain products with an inhibiting action on the influenza virus.

A study was carried out on saprophyte microbial cultures obtained from 72 naso-pharyngeal washings; 9 of these cultures developed in the filtrates a product with a slight inhibitory effect on the influenza virus. From another culture it was possible to isolate staphilococcus albus, which elaborated a product with a definite and

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lasting inhibitory action on the influenza virus. The inhibiting action was checked in embryonated eggs and mice, and was constantly maintained during 30 passages of the initial culture.

It is postulated that this inhibiting factor is a product of the vital activity of the microbial germ, maintained in certain medium conditions.

437.- M.GRUIA, Y.COPELOVICI, A.PESCARU, V.ARMASU, O.MITROIU, T.SANDULESCU. Serologic aspects in patients of the present epidemic (Particularities of the hemagglutination-inhibition reaction). "Gripa" - Date asupra epidemiei din 1959, Ed. Med. 1959.

The presence of anamnestic hemagglutino-inhibiting antibodies against antigen A and A₁ was found in the first 10 days of the disease, in patients of the February-March 1959 epidemic.

Antibodies to A₂ were found in 30% of the cases, in titers up to 1/160, determined by means of the usual technique with hen red-blood cells. The superiority of the technique with human group O red-blood cells is demonstrated by the fact that it revealed in 75 % of the patients the presence of antibodies A₂ in titers ranging between 1/640 - 1/1280.

438.- G.MARINESCU, M.GRUIA, I.SAMUEL, Y.COPELOVICI, O.MITROIU. Morpho-pathologic aspects in the influenza epidemic in Bucharest (February-March 1959). "Gripa" Date asupra epidemiei din 1959. Buc. Ed.Med. 145.

The microscopic study of the organs taken from 20 lethal cases of influenza, most of which were more than 50 years old, revealed the presence of marked hemorrhagic or sere-hemorrhagic oedematous and interstitial pneumonia; desquamative tracheo-bronchitis; hemorrhagic and hyperplasic adenitis; myocardiosis). Multiple histologic aspects due to the vascular processes associated to degenerative and cellular infiltrative-proliferative processes were observed, depending upon the reactivity of the

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organism. Three influenza virus strains, 2 type A₂ and one with a mixed character (A₂+A) were isolated from the lungs and trachea of 3 lethal cases (hemorrhagic apoplexy, se - rous apoplexy and interstitial pneumonia). In mice, the lesions were found especially at the level of the bronchioli and peribronchic tissue; the mortality was very low.

The biologic properties of this influenza virus and of the selected bacterial flora, the cold season and especially the particularities of reactivity (aged persons, or subjects with cardio-pulmonary antecedents), stand at the basis of the etiopathogenic mechanism of these multiple and varied histologic aspects.

439.- G. MARINESCU, D. SARATEANU, N. DRAGANESCU, E. NASTAS, B. MUSAT. Study on the resistance to influenza of suckling mice from mothers immunised a little before or after birth. The role of natural lactation. St. cerc. inframicrobiol. 1959, 10, 3, 315.

In order to demonstrate the use of vaccinating pregnant women for the influenza prophylaxis of children, an experiment was carried out on 89 suckling mice. The 19 mother mice were divided into: group A, 3 mothers (with 16 babies) inoculated by intranasal route with the live influenza virus in non-lethal doses several hours before birth; group B, 4 mothers (with 14 babies) inoculated with anti-influenza ovovaccine by subcutaneous route, immediately before and after birth; and group C vaccinated with the same ovovaccine in 2 doses at 4 days interval, by subcutaneous route after birth (4 mothers, 16 babies). Four days after the last vaccination, the babies from group C were exchanged with 23 babies from 4 non-immunised mothers (group D). Group E, 4 mothers with 17 babies served as controls.

After the challenge inoculations, the first two groups showed a mortality rate of 27 % in the suckling mice as compared to the extremely high mortality rate of the control suckling mice (94.1% group E). On the other

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hand, the exchanged suckling mice, fed by non-vaccinated mothers (group D) yielded 100 % mortality, whereas the baby-mice suckled by previously vaccinated mothers (immediately before birth-group C) presented a very low mortality rate (22.2%).

440.- M.MINCULESCU, D.TARCHILA, S.CARNARU, AL.PETRESCU, AL.BRONITKI. The dynamics of influenza virus concentration in the lung of mice. Report read at the Youth's Session of the Institute of Inframicrobiology, March 24, 1958.

White mice were infected by introducing them into a closed cage, in which allantoic fluid containing influenza virus was pulverized. Death of the animals occurred in 90.88% of the cases on the 7th and 8th day following infection; the rest died on the 3, 5, 6th day. Hemagglutination with the lung of the mice that died on the 7-8th day was negative in 77% of the cases, the rest of the tests yielding low titers of 1/40 - 1/80; the lung of other animals sacrificed on the 3-5th day after inoculation yielded positive hemagglutination reactions in high titers, up to 1/1280. Passages on mice and embryonated eggs with the lung of mice that had died on the 7-8th day and with negative hemagglutination reaction were all positive, demonstrating the presence of the influenza virus in the lungs. The morpho-pathologic examination of the dead animals, irrespective of the day after inoculation, demonstrated that the determinative factor of death was a toxic-allergic mechanism.

441.- L.MIRZA, P.STROESCU-ATHANASIU, AL.PETRESCU. Influence of anti-influenza vaccination on non-conditioned vascular and respiratory reflexes. St. cerc. inframicrobiol., 1959, 10, 2, 163. - Rev.Sci.Med. 1959, 4, 65.

The vascular and respiratory reflexes were recorded in a group of 20 volunteers, doctors and laboratory per-

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sonnel from the Institute of Inframicrobiology, after which they were vaccinated with the anti-influenza vaccine. The first 47 hours after vaccination, an accentuated inertia of the plethysmographic curve was observed, as well as reduced reactivity of the vaso-motor reaction to various stimulants. In the following 2 weeks inertia either remained in a lagging state, sometimes alternating with phases of normal excitability, or was replaced by a state of increased excitability. Hypnotic phases appeared in some cases. These modifications were not observed in the controls. Respiration did not, as a rule, suffer important changes. The titer of anti-influenza hemagglutination inhibiting antibodies increased, with a single exception, in the vaccinated persons and remained the same or decreased in the controls.

442.- AL.PETRESCU, P.ATHANASIU. Antigenic correlations between the 1957-1958 laboratory epidemic strains and the 1958 postepidemic strains. St.cerc.inframicrobiol. 1959, 10, 2, 235.

Antigenic relations between four influenza virus strains isolated during the 1957-1958 epidemic and two influenza strains isolated during the 1958 postepidemic period. Cross hemagglutination showed that the 1958 postepidemic strains belonged to type A (PR 8), similar to autochthonous strain A/T/53 and that the static epidemic strains lose the fraction, which they have in common with strain A/T/53, in the course of their transformation into laboratory strains. Direct antigenic relationship between the 1957-1958 epidemic strains and the 1958 postepidemic strains was established, their common feature being a small antigenic fraction of type A (PR 8).

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443.- G.POPESCU, N.CAJAL. Development of the influenza virus in embryonated eggs under the action of cortisone acetate. St. cerc. inframicrobiol., 1959, 10, 3, 327.

In view of the previously obtained results on exacerbation of some inframicrobial infections under the action of cortisone, a study of the influence of this hormone on the development of influenza hemagglutinins in embryonated eggs was proposed.

The following conclusions were drawn after 8 serial experiments on 149 embryonated eggs: administration of cortisone (1.25 mg and 0.375 mg) in the allantoic cavity of the chick embryo 2 hours before inoculations, by the same route, of the influenza virus type A, strain "T", favours multiplication of the influenza virus.

Therefore, in order to obtain antigens in higher titers, it is advocated to use this hormone in the techniques of preparation of influenza antigens, necessary for the hemagglutination and hemagglutination inhibition tests.

444.- R.PORTOCALA, V.BOERU, I.SAMUEL. Biosynthesis of the influenza virus from viral ribonucleic acid. - C.R.Acad. Sci. 1959, 249, 201 - St.cerc.inframicrobiol., 1959, 10, 1, 51.

Ribonucleic acid is the pathogenic factor of elementary bodies since it causes experimental infection in the absence of the protein, lipid or glucid fractions of these particles.

This acid, isolated from the influenza virus and inoculated into the embryonated egg, induces the cells to synthesize the homologous virus with its infective, hemagglutinating, antigenic and morphologic characters.

The new strain, recombined in the cell, possesses certain characters that differ from those of the initial strain: loss of an antigenic fraction, a different pathogenic action against the mouse and the presence of filamentous forms characterizing recently isolated strains.

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It is thus demonstrated that biosynthesis of the virus from ribonucleic acid can be achieved not only in the case of simple viruses, with a reduced chemical structure, but also in large, chemically complex viruses, such as the influenza virus.

445.- R. PORTOCALA, V. BOERU, I. SAMUEL. Biosynthesis of the influenza virus from a virus extract obtained with ether and phenol. Acta Virologica 1959, 3, 172.

Ribonucleic acid can be obtained from the influenza virus by ether and phenol extraction. This extract induces synthesis of the elementary bodies of the influenza virus in the sensitive cells of the embryonated egg.

446.- R. PORTOCALA, S. DUMITRESCU, N. I. IONESCU, AL. BRONITKI. Morphologic study of the influenza virus strains isolated in the February-March 1959 epidemic in the R.P.R. St. cerc. Infamicrobiol., 1959, 10, 4, 433.
- " Gripe. Date asupra epidemiei din 1959 " Ed. Med., Buc., 1959, 112.

The morphologic aspect of the influenza virus strains isolated during the 1959 epidemic in the R.P.R. were studied by means of the electron microscope. From the antigenic point of view, these strains were classed in three types: A, A₂ and the " mixed " type A + A₂.

The morphologic data obtained revealed an interesting fact, regarding interpretation of the " mixed " strain. The polymorphous morphologic aspect that characterizes types A and A₂ and which are found blended together in the " mixed " type, the different sizes of the type A and A₂ particles which are superimposable on the two sizes of the " mixed " type, as well as double antigenicity serologically demonstrated for the latter type, make it possible to assert that, at least from the morphologic view-point, the so-called " mixed " strain represents a physical mixture of the two strains rather than a homogenous strain with an antigenic mosaic.

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447.- R.PORTOCALA, V.BOERU, I.SAMUEL. On the biosynthesis of the influenza virus from virus-extracted ribonucleic acid II. Properties of recently isolated strains and ribonucleic acid. C.R. Acad.Sci.(Paris) 1959, 249, 848.

The influenza virus submitted to ether and phenol extraction, liberates a ribonucleic acid that incites the allantoic cells to synthesize the homologous virus. Type A₂ strains do not liberate an active ribonucleic acid, due probably to the presence of the numerous incomplete forms of this strain. In opposition, the recently isolated type A strains seem to liberate a much more active ribonucleic acid than the strains maintained in the laboratory by numerous passages.

Ribonucleic acid solutions are very labile, contrary to the virus suspensions, since they lose their infective property under the action of heat, prolonged preservation and ribonuclease. These results demonstrate the absence of viral elements in the ribonucleic extracts.

448.- R.PORTOCALA, V.BOERU, I.SAMUEL. Infectivity of ribonucleic acid isolated from the influenza virus. Rev. Sci.Med., 1959, 4, 95.

Phenolic extract of the influenza virus contains ribonucleic acid which is the proliferative factor of the virus. This acid is inactivated by ribonuclease, temperature and prolonged storage. Influenza virus type A₂ does not liberate infective nucleic acid. The recently isolated strains type A give a much more active ribonucleic acid than that stored for a long time in the laboratory.

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449.- D.TARCHITA, M.ALDEA, AL.BRONITKI, AL.PETRESCU. Study of certain substances with a virucide action on the influenza virus in the air. St. cerc.inframicrobiol., 1959, 10, 3, 333.

A study was carried out on the virucide effect of volatilized lactic acid and of fir-tree resin, used in fumigations and pulverisations, on the aerosol sprayed influenza virus in air. Experiments were carried out in an air-tight container. Allantoic fluid from eggs infected with virus A strain was employed. 301 white mice were experienced upon.

In the control experiment, the mice kept in an atmosphere with pulverised infected allantoic fluid died in a proportion of 100 %, most of them on the 7th and 8th day after infection (93%).

Lactic acid vapours in concentrations of 10 mlg/cubic meter air, evaporated 30 minutes before aerosol spraying of the influenza virus, yielded an excellent virucide effect, 92 % of the animals surviving. Lactic acid evaporated 60 minutes before aerosol spraying of the influenza virus as well as after aerosol spraying had no virucide effect.

Still better results were obtained with fumigated fir-tree resin, (alcoholic extract of Pinus alba resin).

Fumigation carried out both 30 minutes and 60 minutes before aerosol spraying of the influenza virus, led to survival of 100 % of the animals. The fluid alcoholic extract of Pinus alba resin did not have a virucide action.

450.- G.MARINESCU . A simple procedure for investigating cold agglutinins: a guiding test in the diagnosis of inframicrobial primary atypical pneumonia. St. cerc. inframicrobiol., microbiol., parazitol., 1951, 2, 1-2, 157.

With a view to investigating cold agglutinins for the diagnosis of primary viral pneumonia, a simple, economic method is described which can be applied at all ages (especially breast-fed infants).

This method consists in drawing the blood into the

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white blood cell pipette up to the 0.15 mark and diluting it with saline up to the 11 mark; the content is put into a hemolysis tube and then into the ice-box. It can be read after 4-18 hours. The agglutination titer, when agglutination occurs, is approximately 1/125, the lowest limit at which such a reaction can be considered positive for intramicrobial atypical pneumonia. If the reaction is negative, it can be readily repeated at any moment.

451.- M.VOICULESCU, G.MARINESCU. Clinical and experimental investigations on viral pneumonia in children. Pediatrics, 1953, 2, 28.

Primary viral pneumonia, representing about 10 % of the total number of pneumonia cases observed, was exceptionally severe (mortality rate 15.4 %) especially in infants.

Inoculation to the common laboratory animals induced, particularly in the mouse, certain of the aspects noted in human pathology.

452.- M.VOICULESCU, G.MARINESCU. Primary viral pneumonia in children. Clinical, morphopathologic and experimental study. St. cerc. Pediatrie, 1955, 2, 117.

Clinical and morphopathologic observation in human cases are presented together with a comparative study on laboratory animals in which some of the histopathologic aspects encountered in man were reproduced by inoculation of pathogenic products. The clinical study of 26 cases of primary atypical viral pneumonia in children (6 months to 16 years), representing 10 % of the total number of cases of pneumonia hospitalized, revealed the severity of this disease in small infants in which the mortality rate attained 25 % due to nervous complications.

The morphopathologic examinations showed at the level of the lung interstitial infiltration with prevalent mononuclears, vascular changes that led to disturbances of respiration and degenerative-proliferative lesions in the

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broncho-vascular trunk. Discrete parenchymatous degenerations and modifications of the mesenchyma system were observed in the other organs. In the nervous system, meningo-vascular infiltrations were noted. The animals inoculated (mice and guinea pigs) by various routes with pathogenic products (lung, spleen, brain) from 2 lethal cases of primary viral pneumonia, showed that the most severe route of inoculation was the respiratory route, and the most virulent material the lungs and spleen.

The most severely affected organs were the lungs, spleen and mesodermal component of the nervous system and to a lesser degree the liver and kidneys.

493.- T.MANICATIDE, FL.PAUN, M.MIRSAN, S.OIRNARU, A.ENE, EL.MANICATIDE, I.VILCU, AL.PETRESCU, P.ATHANASIU.
Atypical pneumonias in the new-born infant. Symposium
 on the 1957-1958 influenza epidemic. Bucharest, 4-5
 December 1958.

In 1957-1958, 48 cases of acute pneumonia were admitted to the Second Clinic of Pediatrics, Bucharest, of which 25 were diagnosed as atypical pneumonias. Three of these cases alone survived. In view of the clinical symptomatology, histologic lesions and serologic reactions, all the cases were listed in the group of primary atypical pneumonia (21 cases) and influenza atypical pneumonia (1 case).

In 2/3 of the cases the evolution is supra-acute, followed by death. The histologic lesions were either purely atypical pneumonia lesions, or mixed lesions; the bacteriologic control of the necroptic cases were constantly negative. The virologic study, on the other hand, revealed in several cases a non-hemagglutinating inframicrobial agent pathogenic for mice. These animals died 14-15 days after inoculation by intranasal route or 4-5 days after peritoneal inoculation. The virus passes through the Seitz EK.3 filter, is maintained in saline at -20°C or in glycerin at $+4^{\circ}\text{C}$. It is neutralized by the anti-influenza A₁, A₂, B, C and D sera and does not cross-immunize with any of the influen-

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za viruses isolated in our country, pathogenic for mice. It is not inactivated by penicillin, streptomycin and terramycin.

454.- V.PANCU, AL.PETRESCU, P.ATHANASIU. Considerations on a viral respiratory epidemic in the spring of 1958, in the town and district of Botosani. Symposium on the 1957-1958 influenza epidemic. Bucharest, December 4-5 1958.

In the March-June 1958 interval, 367 cases of acute respiratory affections were reported among small infants, taking on the aspect of an epidemic outbreak. Of these cases, 166 were diagnosed clinically and radiologically as typical broncho-pneumonia, with a severe evolution and a 10 per cent mortality rate. The onset was usually insidious, after 3-4 days the symptoms became more severe and the general state developed towards collapse accompanied by the other characteristic signs of broncho-pneumonia.

The attempts made at isolating the causal agent from the naso-pharyngeal secretion or the faeces revealed in 2 cases a non-hemagglutinating virus, pathogenic for the white mouse by intranasal or intraperitoneal inoculation. The animals died 14-15 days after intranasal inoculation and 4-5 days after intraperitoneal inoculation. The virus passes through the Seitz EK.3 filter, and is stored in glycerin at + 4°C or in saline at - 20°C. It is not neutralized by anti-influenza sera type A, A₁, A₂, B, C and D, and does not cross-immunize with any of the other influenza viruses isolated in our country.

The virus is pantropic and can be revealed in all the organs of animals which died of the experimental disease. It is not inactivated by antibiotics: penicillin, streptomycin and terramycin.

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455.- D.SARATEANU, N.DRAGANESCU, EL.NASTAC, EL.OPRESCU,
B.FUHRER. Serologic investigations in pulmonary
viral affections. Conference of the Czechoslovakian
virologists, Smolnice, 14-17 October 1958.

A serologic study was carried out in 130 cases of
primary atypical pneumonia.

The results obtained show that influenza viruses
type A and A' are incriminated in the etiology of viral
pneumonias in 42,3 % of the cases, the ornithosis virus in
36,9 %, neo-rickettsia in 6.1 %, primary atypical pneumo-
nia virus in 2.3 % and lymphocyte choriomeningitis in 0.76 %
of the cases.

Attention is drawn to participation of neo-rickettsi-
as in the etiology of atypical pneumonias, and stress is
laid on the importance of double and triple serum tests,
in order to be able to make the serologic diagnosis.

456.- D.SARATEANU, N.DRAGANESCU. Non-influenza viral
pneumonias during the 1957-1958 epidemic. Report
read at the Influenza Symposium, 4-5 December 1958
Bucharest.

Experimental and serologic investigations on the
problem of the etiology of viral pneumonias are described.
At the same time, the data in literature, referring to the
etiology of viral pneumonias are reviewed.

From the data presented, the possibility of esta-
blishing the etiologic diagnosis by means of serologic
reactions, isolation and identification of the virus re-
sults.

Mixoviruses

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457.- D.SARATEANU, AL.BRONITKI, Laboratory diagnosis of influenza . Microbiol., parazitol., epidemiol., 1959, 3.251.

The paper is a synthesis of the diagnostic methods applied in influenza. The dynamics of the data are shown and mention is made of the products to be collected from patients and necroptic cases, of how to prepare the products for inoculation, inoculation of sensitive animals, embryonated chick eggs and tissue cultures. The use of the serologic (complement fixation, hemagglutination and hemagglutination-inhibition), cytologic (Koleaditzkaia and Panthier) and histologic methods of diagnosis are described.

458.- R.PORTOCALA, V.BOERU, I.SAMUEL. The role of ribonucleic acid in the infectivity of the influenza virus. St.cerc.inframicrobiol., 1961, 11, 171.

The phenol extract obtained from the influenza virus contains ribonucleic acid that is the infectious factor of the virus since, inoculated into the allantoic cavity of the embryonated egg it induces the sensitive cells to synthesize the homologous virus with all its morphologic, antigenic and infectious properties.

The ribonucleic molecules are very labile and under the action of ribonuclease, temperature and prolonged storage, completely lose their activity.

The new influenza virus strains produced by intracellular synthesis under the action of ribonucleic acid, present certain biologic characters that differentiate them from the initial strains.

The virus strains of antigenic A₂ type never release active ribonucleic acid, probably due to a high proportion of incomplete elementary bodies.

Recently isolated type A virus strains appear to release a much more active ribonucleic acid than the strains carried through numerous passages in the embryonated egg.

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Synthesis of a virus from its ribonucleic acid may be obtained not only with simple nucleoprotein viruses, but also with more complex viruses, such as influenza virus.

459.- A.DEREVICI, AL.BRONITKI. Study of tissular antiinfluenza antibodies in animals apparently resistant to the experimental infection. St.cerc. inframicrobiol., 1960, 11, 1, 51.

During investigations on the immunogenesis in influenza tissular and serum antibodies were investigated in animals apparently resistant to influenza (rats and rabbits), subjected to repeated bleeding and perfusions. Separation of tissular from serum antibodies is best obtained by the technique proposed by the authors, i.e. collection of organ fragments before and after perfusion. The serum antibody titers were higher than tissular titers. Tissular antibody titers, before and after bleeding, present differences which are more accentuated in the spleen and liver, organs with an ample circulation. The highest tissular antibody titers were found in the lung, a fact explained by the pneumotropism of the virus; then the kidney, through which the virus is eliminated. The liver and spleen present low titers.

460.- P.ATHANASIU, AL.PETRESCU. The effect of cultivation of the influenza virus, strain A/T/53 in animals with modified reactivity. St.cerc. inframicrobiol., 1960, 11, 117. L'Inform. Med. Roum. 1960, 12.

An influenza virus strain adapted to the chick embryo and slightly pathogenic for the white mouse was cultivated in normal mice and in mice previously infected with 1/2 LD₅₀ of street rabies, herpes or poliomyelitis viruses, or immunized against rabies or poliomyelitis.

The variants obtained were studied as regards pathogenicity, hemagglutination, antigenicity and immunogenicity. The values of the biologic properties of the variant cultivated in the rabid mice were close to those of the initial strain

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with an increase of pathogenicity and antigenicity. The biologic properties of the variants cultivated in the animals previously infected with herpes or poliomyelitis, or immunized against rabies or poliomyelitis, showed a decrease of the values as compared to the initial strains, except for the immunogenic potential which was higher. With the virus cultivated in normal mice, the pathogenic potential, hemagglutination and antigenicity fell to zero, and only the immunogenic potential was maintained, at a lower level.

461.- A.DEREVICI, AL.BRONITKI, AL.PETRESCU. Biologic aspect of influenza virus strains isolated in the Rumanian People's Republic. Relationship to the February-March epidemic strains. St. cerc. inframicrobiol. 1960, 11, 2, 211.

A comparison study was carried out on the influenza virus strains isolated in the country from 1953 to 1959; showing the variability of the autochthonous strains and the appearance of new types (A_2).

Study of the influenza virus strains isolated in the country during the 1959 February epidemic showed a lack of homogeneity; during the first days an influenza strain type A (PR 8) was isolated, then type A_2 and finally $A+A_2$.

The strains were isolated during the epidemic period in various university centers in the country.

462.- Y.COPELOVICI, M.GRUIA. Experimental investigations on influenza virus strains isolated during the 1959 February-March epidemic. St. cerc. inframicrobiol. 1960, 11, 2, 361.

Study of the pathogenicity for mice of some influenza A_2 and mixed $A_2 + A$ strains, isolated during the 1959 February-March epidemic, showed a low pathogenicity for this animal. The mixed virus strains can be adapted to mice after previous X-ray irradiation of the animals (450 r).

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463.- E.SORU, A.DEREVICI, AL.BRONITKI. Chromatographic determinations of certain aminoacids from influenza virus strains isolated in the Rumanian People's Republic during the 1959 epidemic. St.cerc.inframicrobiol. 1960, 11, 3, 357.

Chromatographic analysis of certain aminoacids from influenza viruses isolated during the 1959 epidemic (A_1 , A_2 and mixed $A+A_2$ strains) and a physical mixture in equal parts of A and A_2 eluates, showed:

1. More significant quantitative differences as regards tirosine, glutamic acid, arginine and the aspartic, serine and glycochol group; minimal differences were found for leucine, alanine, phenyl-amyllalanine and no differences for valine and lysine.

2. Comparison of aminoacid concentrations in the mixed strain and the physical mixture of the component $A/59$ + $A_2/59$ strains, showed equal values in 66 % of the aminoacids determined.

3. Comparison of aminoacid concentrations in strains $A_2/59$ and strain A_2 isolated during the 1957 epidemic, showed different values for glutamic acid and lysine and small differences as regards the concentration of the other aminoacids.

These results characterize the correlation between the chemical substrate and biologic properties of the various strains investigated.

464.- A.DEREVICI, L.PREDESCU, AL.BRONITKI, I.COTARCEA.

Particularities of an influenza virus strain of the mixed $A+A_2$ type isolated in the Rumanian People's Republic during the late post-epidemic period in 1959. St.cerc.inframicrobiol., 1960, 11, 3, 375.

Virologic study of strain Pa/59, isolated towards the end of 1959, showed in inoculations to mice predominant neurotropism. Intracerebral inoculations permitted isolation of the virus from the first passages.

Adaptation of the strain to the lung is obtained only with products from passages in the brain or the allantoic

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fluid of embryonated eggs, likewise after the first passages. These characters differ from those of the mixed A+A₂ strain isolated at the end of the 1959 epidemic, probably due to a new constitutional structure of the virus, which underwent, during the 7 months interval, numerous passages through the human organism.

The hyperergic character of ~~the clinical~~ evolution in children may be attributed to the biologic characteristics of virus Pa/59, as well as to the specific reactivity of infants.

465.- A.DEREVICI. Heterogeneity of certain influenza virus variants tested by the technique of end infectious dilutions. St.cerc. inframicrobiol., 1960, 11, 4, 555.

Investigations were carried out by the technique of end infectious dilutions on some influenza virus variants isolated during the 1959 epidemic, presenting from the serologic view point the complex antigenic structure of type A and A₂.

Determinations were done with 1,75 % and 33 % of ID₅₀ and seroneutralization with immune serum A and A₂. The strains obtained were inhibited by both sera A and A₂ and others only by A₂. Subculture of type A₂, resulting from inoculation of 23 % of ID₅₀, neutralized by antiserum A 1/15, showed the presence of strains A₂ and A+A₂. The experimental results showed that the strain investigated is a transition strain, with an instable structure, that may be dissociated in the course of the passages.

466. O.MITROIU, P.ATHANASIU, Y.STRULOVICI, M.POPA. The varied etiology of certain influenza-like cases with an epidemic character. Report read at the session of the Institute of Inframicrobiology, July 4, 1960.

In order to establish the etiology of certain influenza-like cases with an epidemic character, investigations were carried out on 25 of 170 cases diagnosed clinically as influenza or influenza with pneumonia.

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Cytopathic agents were isolated in tissue cultures from 8 cases and identified as forming part of the APC group by complement fixation.

A virus, isolated in mice, was neutralized by convalescent serum and Boto-antiserum. Attempts at isolation of the influenza virus remained negative.

The predominant adenoviral etiology of these cases became apparent and attention is drawn to the existence of epidemic cases caused by APC viruses and the necessity of bearing in mind this possibility in future etiologic investigations.

467.- R.PORTOCALA, S.DUMITRESCU, N.IONESCU, I.SAMUEL, V.BOERU. Replication of the influenza virus by means of viral ribonucleic acid. III. Morphologic aspect of the generated virus. Comun. Acad.R.P.R. 1960, 10, 5, 453.

A study was carried out in the electron microscope on the morphology of the influenza virus generated by the ribonucleic acid extracted from a strain of the pure A antigenic type. The morphologic aspect and the size of the viral elementary bodies obtained in this way do not differ as a rule from those of the initial strain. Thus, the mean size of the virus from the first culture and from the first passage in embryonated eggs is $100.7 \pm 0.7 \text{ m}\mu$. This is identical to the size of the initial virus, from which the ribonucleic acid was extracted.

Serologic investigations demonstrate the antigenic identity of the ribonucleic acid generated strain and the initial strain. The morphologic results obtained confirm the hypothesis according to which the receptive cell synthesizes the complete influenza virus starting from a template of the nucleic acid molecules introduced into the cell.

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- 468.- R.PORTOCALA, S.DUMITRESCU, N.I.IONESCU, AL.BRONITKI
Morphologic aspects of an influenza virus strain of
the "mixed A + A₂" type as compared to types A and A₂.
 Rev.Sci.Med.1960,5, 3-4, 223.

In view of the experimental results obtained, the authors consider the mixed influenza virus strain as a physical mixture of two different populations, each belonging to a different determinant type of influenza virus.

- 469.- R.PORTOCALA, V.BOERU, I.SAMUEL. Replication of the influenza virus by means of viral ribonucleic acid.
IV.- Study of ribonuclease in embryonated eggs of various ages. St.cerc.inframicrobiol., 1961, 12, 1, 71.

Study of ribonuclease in chick embryonated eggs showed that in the chorio-allantoic membrane and the allantoic fluid, the enzymatic amounts follow an ascending evolution, in terms of the development of the embryo.

It is recommended to use, for investigations on the infectivity of influenza ribonucleic acid, 10 to 11 days old eggs, since they contain the lowest amount of RN-ase.

The likelihood of certain quantitative and qualitative changes of RNA in terms of the season in which the virus is cultivated in eggs and, implicitly, of nucleic acid extraction, should be taken into consideration. These changes might explain, together with the evolution of RN-ase, seasonal failure to produce the influenza virus from its RNA.

- 470.- R.PORTOCALA, M.ANDREESCU . Replication of the influenza virus by means of viral ribonucleic acid.
V.-Influence of the quality of phenol on ribonucleic acid activity. St.cerc.inframicrobiol., 1961, 12, 1, 77.

The impurities found in the four types of phenol supplied from different sources and used for the extraction of viral RNA, were identified and determined. The presence of heavy metal ions, especially lead, in some phenols, accounts for the inactive RNA obtained. The smallest amounts of impu-

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rities are to be found in Soviet phenol, with which an active RNA is constantly extracted.

It is recommended, in order to prepare antiviral vaccines attenuated by phenol, to use a pure solution of this substance so as to avoid total inactivation of the vaccine virus.

471.- O.BURDUCEA, M.CEPLEANU, R.CAPRARU.- Evolution of HAI antibodies in white rats immunized against influenza, under the influence of I^{131} and P^{32} irradiations. St. cerc. inframicrobiol., 1961, 12, 1, 137.

Investigations were carried out on the evolution of HAI antibodies at 4, 8, 12 and 20 day intervals, following inoculation to white rats immunized against influenza, 25 μ C amounts of I^{131} or P^{32} , or stable iodine or phosphorus at a pH and concentration equal to those of the radioactive solutions.

It was found that under the action of gamma radiations emitted by I^{131} , the titer of antiinfluenza HAI antibodies significantly decreases, as compared to the control group.

P^{32} , stable I and P do not influence the titer and evolution of antiinfluenza HAI antibodies.

472.- P.ATHANASIU, M.POPA. A study of hemagglutinating influenza antibodies in rabbits inoculated with influenza virus into the conjunctival sack after ligation and section of the lachrymal canal. St. cerc. inframicrobiol. 1961, 12, 2, 229.

Inoculation of influenza virus into the conjunctival sack of rabbits whose lachrymal canal had been ligated and sectioned, resulted in a moderate increase of influenza antibodies in the blood serum. This result points to the possible occurrence of influenza infection by the conjunctival route, i.e. independently of the nasopharyngeal route and confirms similar investigations reported by Cl.Hannoun.

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- 473.- ACAD.ST.S.NICOLAU, N.DRAGANESCU, V.BOERU, N.I.IONESCU. Spectrophotometric investigations in UV light on ribonucleic acid extracted from the influenza virus inactivated by copper ions. St.cerc.inframicrobiol. 1961, 12, 3, 285; C.R.Acad.Sci.1961, 213, 1503.

Study of the absorption spectrum in UV light of ribonucleic acid extracted from the influenza virus inactivated with copper nitrate in a 0.5% concentration did not show any change in the ribonucleic acid curve.

- 474.- R.PORTOCALA, V.BOERU, S.HARAGEA, I.SAMUEL. Reproduction of influenza virus with the aid of viral ribonucleic acid. St.cerc.inframicrobiol. 1961, 12, 3, 303.

The ether-phenolic extract of influenza ribonucleic acid, subjected to dialysis - precipitation with alcohol and redissolved in normal saline, presents in ultraviolet light and absorption curve characteristic of ribonucleic acid, with a peak at 258 mμ.

The absence of proteins in the studied extracts proves once more that the infectivity of these extracts is due solely to ribonucleic acid.

- 475.-R.PORTOCALA, N.I.IONESCU, S.DUMITRESCU, V.BOERU, I.SAMUEL, E.PACURARU. Reproduction of the influenza virus with the aid of viral ribonucleic acid. VII.- Morphologic aspect of ribonucleic acid. St. cerc. inframicrobiol. 1961, 12, 3, 309.

A study was carried out in the electron microscope on the morphologic aspect of infective ribonucleic acid extracted from influenza virus. For this study the preparations were made with the products collected before the end of the extraction.

The electronoptic examination showed the presence of characteristic strands. In most cases these formations are joined together along their lengths, forming thick clusters.

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The diameter of the finest visible strand in the preparations is 30 Å. Certain hypotheses are emitted on the impossibility of evidencing finer strands. In the products collected at the end of extraction the strands described are no longer found, a fact discussed by the authors.

On the same preparations, the presence of viral elementary bodies, with a morphology deeply altered by the brutal action of phenol, may likewise be observed. Their presence may be accounted for by the fact that the ribonucleic acid was obtained from incomplete extractions.

476.- A.DEREVICI, G.BALMUS, AL.BRONITKI, G.ISAIA. Local and general paraallergic phenomena obtained in the rabbit with the influenza virus. St. cerc. inframicrobiol. 1961, 12, 3, 335; Rev.Sci.Med. 1961, 3-4.

The findings of the authors show that the influenza virus may produce in the rabbit localized (Schwartzman) or generalized (Sanarelli-Schwartzman) para-allergic phenomena. Leuko- and plateletpenia become evident 2 and 4 hours after the inducing injection, followed by hyperleukocytosis and return to normal of the platelets. Quantitative differences are observed in the controls.

The same hematologic characteristics were found in the group subjected to the phenomenon of generalized para-allergy, differing however in that leukopenia appeared only after 72 hours. The controls of this group presented marked quantitative differences, which makes it possible to attribute to the influenza virus exacerbation of the phenomena observed.

Pathologic histology of the kidney and lung of the rabbits subjected to the Sanarelli-Schwartzman phenomenon showed the intervention of hemorrhages, thrombosis, lymphomonocytic infiltrations, blood extravasations, far more accentuated in the rabbit sacrificed 4 days after the inducing injection than in the rabbit sacrificed after 4¹/₂ hours. The aspects observed in the lung and kidney were not observed in the liver and brain.

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477.- Al.BRONITKI, A.DEREVICI, G.BALMUS, PHAM SONG Cytotracheogram in mice subjected to influenza infection under the action of histamin. St.cerc.inframicrobiol. 1961, 12, 3, 367.

Histamin administered in the form of aerosols to mice subjected to influenza infection brings about quantitative histopathologic changes in the tracheal cells, studied by means of the Panthier technique.

The tracheocytogram of mice receiving, besides the virus, histamin and an antihistaminic (suprastin), taken on an aspect closer to that observed in the mice that received only the virus.

The control mice, receiving only histamin or tracheal washings with normal saline, did not present giant cells with a vacuolar content, nor catoplasmatic formations considered by some authors as virus colonies.

Administration of histamin to mice inoculated with material from an influenza-suspect case, may help to reveal the presence of the latter by means of the cytotracheogram study, according to the technique described in the paper.

478.- A.DEREVICI. Investigations in the problem of influenza in the Rumanian People's Republic between 1950 and 1960. St.cerc.inframicrobiol. 1961, 12, suppl., 57.

The main stages in the study of influenza during the 1950-1960 period are described.

The results of isolation and typing of influenza virus strains in Rumania are reported, as well as comparative studies on the various strains corresponding to the different epidemic periods. The author likewise describes the first antiinfluenza vaccine made in the country and the results of its mass application.

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479.- A.DEREVICI, AL.BRONITKI, G.BALMUS. The allergic factor in experimental influenza infection. The role of histamin. St. cerc. inframicrobiol., 1961, 12, suppl., 235; Rev.Sci.Med. 1961, 6, 1-2, 33.

The allergic factor in influenza infection was investigated by exposing mice to histamin aerosols following their infection with influenza virus. The disease was found to be exacerbated, it was accelerated and the mortality rate was higher. This effect is definitely attenuated by the administration of an antihistaminic (suprastin).

Substitution of the antihistaminic by chlorpromazine (Largactyl) did not result in an improvement of the disease, as expected, but on the contrary, in enhancement of influenza infection.

Virus multiplication, as tested by hemagglutination in the lungs of the dead mice, is not influenced by administration of the above drugs. This points to the presence of neuro-hormonal disorders in the course of the influenza infection process.

From those results, the existence of an allergic factor in the course of influenza infection may be inferred.

480.- AL.PETRESCU, P.ATHANASIU. Alterations of the mitochondria in white mice during influenza immunization. St. cerc. inframicrobiol., 1961, 12, suppl., 249.

The authors have studied cellular mitochondria in white mice undergoing influenza immunization, as compared to the controls.

It was found that between the 5th and the 10th day following immunization, no mitochondria were demonstrable in the tracheobronchic epithelium, liver and skeletal muscle. This phenomenon, which is reversible, is assumed to be due to changes in their biochemical constitution.

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48 M.VOICULESCU, G.MARINESCU. Nervous involvement in influenza
The third Congress of the Czechoslovakian microbiologists
on respiratory viral disease., May, 1961.

During and after the influenza pandemic due to virus A₂,
38 cases with varied nervous involvement were observed: 13
cases of serous meningitis, 7 encephalitis, 5 meningoencepha-
litis, 12 facial paralysis and one transverse myelitis.

The etiologic diagnosis was confirmed by the presence
of inhibiting and hemagglutinating antibodies, studied dyna-
mically by the absence of enteral viruses (in the cases with
facial paralysis) and on the basis of epidemiologic findings.

The neurologic signs disappeared without sequelae in 2
to 12 weeks, except the case of transverse myelitis, in which
a syndrome of motor spasticity persisted.

482.- Y.COPELOVICI, M.GRUIA, M.BOSCA. Investigations on the
mumps vaccine prepared from autochthonous strains. St.
cerc. inframicrobiol., 1961, 12, suppl., 207.

A live ovovaccine against epidemic parotiditis has been
prepared from three autochthonous mumps virus strains after
26-31 passages on embryonated chick eggs.

Two types of vaccine were investigated: a dialysed vac-
cine according to the method of A.A.Smorodintsev and an undia-
lysed vaccine. As compared to the dialysed vaccine, the undia-
lysed vaccine was found to have a higher infectivity as well
as a higher antigenic potential, as determined by hemaggluti-
nation-inhibition antibody titrations.

Owing to its qualities, as well as to its simpler pre-
paration, the undialysed vaccine is recommended for use in
current practice.

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A.P.C. 483,-

I.ADERCA, M.IANCONESCU, G.DANIELESCU. Investigations on adenoviruses. I.- Isolation of adenovirus strains in the Rumanian People's Republic. St.cerc.inframicrobiol., 1960, 11, 2, 229.

The authors report the isolation of 4 adenovirus strains on human embryo cell cultures obtained by trypsinization. Two strains were isolated from the nasopharyngeal washings of patients with respiratory affections and two strains from the feces of patients suspect of a Coxsackie infection and presenting moreover a rhinopharyngeal infection. The etiologic diagnosis was based upon complement fixation and characteristic alteration of the human embryo cell nuclei in "in vitro" cultures.

484.- M.IANCONESCU, I.ADERCA. Investigations on adenoviruses. II. Cell lesions produced by adenoviruses in human embryo cell cultures. St.cerc.inframicrobiol., 1960, 11, 2, 237.

The characters of the cytopathic effect produced by adenoviruses in human embryo cell cultures were studied. The lesions observed were similar to those described in other types of cells. The characteristic aspect of cell lesions produced by adenoviruses render them easy to identify.

485.- A.DEREVICI, M.ISTRATI. Comparative investigations on the diagnosis of adenoviral diseases by means of complement fixation and agar gel precipitation. St.cerc.inframicrobiol., 1961, 12, 1, 63.

Comparative investigation, for the diagnosis of adenoviral diseases, by means of complement fixation and agar gel precipitation of 243 sera from individuals with respiratory manifestations in the acute stage or convalescence, as well as from apparently healthy persons, showed a proportion of 92.85 per cent agar gel precipitation reactions

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in the group of sera with the highest complement fixation titers (1/128) and a proportion of 13.33 per cent in the group with a complement fixation titer of 1/8.

The existence of a number of negative complement fixation tests, but with a 7.80 per cent of positive precipitation reactions, would suggest that the latter test might give earlier information on the etiology of adenoviral infections, a fact that still remains to be proved by further dynamic investigations.

486.- L.PREDESCU. Progress in adenoviral diseases. St.cerc. inframicrobiol., 1961, 12, 2, 233.

A brief history of the data in literature concerning adenoviroses is drawn up, listing these agents in the group of respiratory viruses, according to the classification of Gorbunova and the W.H.O. The clinics and diagnosis of adenoviral affections are then reviewed.

The properties of the viruses are dealt with in detail. New data are cited from literature regarding: the multiplication cycle, of adenoviruses; production of characteristic cytopathic effect after inoculation into tissue cultures of deoxyribonucleic acid extracted from adenoviruses; the oncolytic effect of adenoviruses; their antigenic component and hemagglutinating properties; cultivation of adenoviruses in tissue cultures.

Data are likewise presented on vaccination in adenoviral diseases, suggesting vaccination of deoxyribonucleic acid extracted from the virus, according to Koprowski who recommends vaccination with pure RNA in other viral diseases.

487.- ACAD.St.S.NICOLAU, S.DUMITRESCU, N.I.IONESCU, UAN TILIAN, E.PACURARU. Morphologic changes in human amniotic cells infected with adenovirus type 3. St.cerc. inframicrobiol., 1961, 12, 3, 289; Rev.Sci.Med.1961, 6, 3-4.

A kinetic study was carried out in the electron microscope on the morphologic changes produced by multiplication of adenovirus type 3 in human amniotic cell cultures, cellular

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line F.L.

These changes observed for the first time by the authors are present especially in the nucleus. They are characterized by the presence of complete, polygonal elementary bodies, distributed throughout the nucleus and protein crystals, considered by the authors incomplete forms of adenovirus.

488.-

A.DEREVICI, L.PREDESCU, G.ISAIA.- Study of antiadenoviral complement fixing antibodies in various age-groups among the population of the Rumanian People's Republic. St. cerc. inframicrobiol., 1961, 12, 3, 325.

Investigations were carried out on antiadenoviral complement fixing antibodies in 699 sera, considering as positive the sera with titers of 1/8 and higher. The proportion of positive sera, classed according to age-groups was 29 per cent in the 1-12 months age-group, 67 per cent in the 1-7 years age-group, 84 per cent in the 7-18 years age-group, 73 per cent in the 18-25 years group and 58 per cent in persons over 25 years old.

The lowest proportion is therefore to be found in the 1-12 months age-group (29 per cent). In the other age-groups the proportions are about equal, the highest values being found in the 7 - 18 years age-group (84 per cent) and in recruits (80.2 per cent), a fact which may be attributed to closer contact under the living conditions of these groups.

The number of isolations of adenovirus strains which was smaller than the proportion of positive complement fixing reactions, points to the utility of this test for a retrospective diagnosis.

489.- G.MARINESCU, D.NAUM, G.ISAIA, L.PREDESCU, Y.COPELOVICI, M.CIOBANESCU. Acute obstructive laryngitis in the course of infections due to viruses from the APC group. St. cerc., inframicrobiol., 1961, 12, 3, 375.

Five acute obstructive cases of laryngitis are reported out of 12 laryngitis cases caused by infection with viruses of the APC group. There was a definite croup symptomatology

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in all the children under the age of 2, in one child aged 5, who had croup for the third time, and a milder form in an older child.

The diagnosis of APC infection was established by isolation of a cytopathogenic agent belonging to the adenovirus group and by kinetic study of complement fixation.

490. A.DEREVICI, AL.BRONITKI, L.PREDESCU. Investigations on the etiology of some focal respiratory viral diseases in different centres in the country during the first half of 1960. Microbiol., parazitol., epidemiol., 1961, 6, 499.

The authors show the result of investigations carried out for the isolation of influenza, APC, Coxsackie, encephalitis, ornithosis and Boto viruses, from January 7, 1960 to April 15, 1960. The material (nasopharyngeal washings, feces, necroptic products) was collected from various foci of pulmonary viral diseases in the country. Laboratory investigations resulted in the isolation of 7 APC strains, 8 Coxsackie strains and 2 influenza virus strains (1 strain type A₂ and the other type A + A₂).

Hemagglutination-inhibition for influenza showed dynamic increase of antibodies in a few cases. Complement fixation for APC yielded positive titers in numerous cases.

Although the symptomatology of the focal viral diseases is often similar, they have not a unitary etiology.

491.- AL.BRONITKI, A.DEREVICI, P.RADULESCU, L.PREDESCU. The prevailing adenoviral etiology of certain respiratory disorders which appeared in the Rumanian People's Republic in 1960. St.cerc. inframicrobiol., 1961, 12, suppl., 243; Rev. Sci. Med. 1961, 6, 1-2, 13.

In winter 1960 focal outbreaks of a respiratory virus disease were recorded throughout the country. Total morbidity was, however, 7 times lower than in 1959. Laboratory investigations resulted in the isolation of 3 influenza virus strains, 9 Coxsackie virus strains and 20 adenovirus strains.

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Serologic investigations performed by means of influenza hemagglutination-inhibition revealed low titers of A and A₂ influenza antibodies.

Complement-fixing adenovirus antibodies were investigated in adults and children displaying or not respiratory symptoms. The tests were positive in about 50 per cent of the cases.

A comparison of these results with those of precipitation in agar gel showed the two reactions to run parallel. However, sera which had not reacted in the complement test were sometimes found to precipitate.

Owing to a process of variability, the virus may possibly have become non-infectious, incomplete, or else, the above findings may be the consequence of a phenomenon of auto- or heterointerference or of seroneutralization by the antibodies found in the population.

492.- R.PORTOCALA, V.BOERU, I.ADERCA, I.SAMUEL. Investigations on infective deoxyribonucleic acid isolated from adenovirus. St. cerc. inframicrobiol., 1961, 12 suppl., 253; Rev. Sci.Med. 1961, 6, 1-2, 91; C.R.Acad. Sci. 1961, 252, 362; Biull. Nauc. Inform.1961,2.

From a strain of type 3 adenovirus the authors have extracted by means of phenol, a deoxyribonucleic acid which displays an intensive cytopathogenic action in vitro on human amniotic and embryonic cell cultures. Following nucleic acid inoculation the characteristic cytopathogenic effect of the virus strain used for extraction sets in after a longer interval than that recorded following inoculation of the virus. In subsequent passages, the virus synthesized by the cells recovers in this respect the characters of the initial strain. Chemical analyses allowed deoxyribonucleic acid to be identified, and spectral analysis revealed the presence of a maximum at 260 m μ which is characteristic of nucleic acids.

The authors emphasize the part played by viral deoxyribonucleic acid which is able to induce the intracellular

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synthesis of adenovirus. In the opinion of the authors, the findings reported, corroborated by the results so far recorded in investigations on the infectivity of ribonucleic acids, prove nucleic acids to possess the general property of being the substratum of the essential characters of viruses.

493.- M.GRUIA, Y.COPELOVICI, L.WEINTRAUB, E.MARC, M.CIOBANESCU. Aspects of an epidemic of adenoviro-sis with exanthema in a closed children's community. St. cerc. inframicrobiol., 1961, 12, suppl., 259; Rev.Sci.Med. 1961, 6, 1-2, 49.

An epidemic of adenoviro-sis accompanied by exanthema in a closed children's community in Bucharest has been studied. By means of complement fixation test, antibody titres ranging from 1/32 to 1/128 could be demonstrated in 12 children. An adenovirus was isolated from the feces of one of these children.

494.- O.MITROIU, C.BARBU, M.POPA, D.COSTANDACHE, O.SFERDEAN, V.GHETU. Investigations on adenovirus antibodies occurring in the course of various virus diseases. St.cerc. inframicrobiol., 1961, 12, suppl., 265; Rev.Sci.Med. 1961, 6, 1-2, 69.

The results of an investigation on the occurrence of complement fixing adenovirus antibodies in the course of various virus diseases, during the post-epidemic period, are reported. About 30 per cent of the patients investigated displayed complement fixing adenovirus antibodies whereas APC antibodies were present in only 11.5 per cent of the controls... from a place in which no case of adenoviro-sis had been recorded.

Out of the 107 cases of virus diseases, 12 displayed suggestive antibody titres, 8 cases exhibited diagnostically significant titres, and in 8 cases dynamic increases were recorded which are definite evidence of adenoviro-sis.

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The presence of antibodies in high titers may be accounted for by their persistence in the post-epidemic period. The dynamic titer increasing during other virus diseases may be due to mixed infections, but might just as well have been determined by a biophytic APC virus which becomes active following the impairment of the general condition, consequent on the major disease. There is, moreover, the possibility of an anamnestic response.

It also results from the above findings that adenoviruses are of rather widespread occurrence among the population.

495.- G.MARINESCU, D.NAUM, J.DIACONU, D.IONESCU. Some aspects of the problem of respiratory forms of infection with: APC virus in children. Casapis Lek.Cesk.1961,34,1080.

Study of 29 children, aged 9 months to 13 years, showed the following respiratory forms of APC infection: rhinopharyngitis (3 cases), rhinopharyngotracheobronchitis with or without conjunctivitis (7 cases), bronchopneumonia and pneumonia with or without rhinopharyngitis (4 cases), erythemo-pultaceous tonsillitis (1 case) and acute obstructive laryngitis (5 cases).

The etiologic diagnosis was confirmed by isolation of the virus (4 cases) and repeated complement fixation tests (16 cases); hemagglutination-inhibition antibodies to the influenza virus were absent or in low, insignificant titers.

As a rule, the leukogram showed neutrophilia with a total number of leukocytes that varied in the first days of the disease; progressive lymphomonocytosis developed from the 5th day, with a total number of leukocytes that generally returned to normal values. In complicated cases (mixed pneumonia, tonsillitis with hemolytic streptococcus), neutrophilia with hyperleukocytosis and a high sedimentation rate was found.

496.- M.VOICULESCU, G.MARINESCU, I.PREDESCU, A.CONSTANTINESCU, Y.COPELOVICI. Particular symptomatology in infections due to APC virus. The IIIrd Congress of the Czechoslovakian microbiologists on respiratory viral diseases. May 1961.

Two cases of infection due to APC virus, with a particular evolution, are reported: 1 case of febrile pharyngitis with temporary paresis, pointing to possible poliomyelitis, and a second case of febrile rhino-pharyngo-bronchitis, accompanied by a rubeolalike eruption.

In both cases, an APC virus strain was isolated in human embryo tissue cultures, in one case from the pharynx, in the other from the feces.

The clinical picture showed the variety of the clinical manifestations of APC affections, which may simulate different other diseases.

Atypical pneumonia.

497.- V.PANCU, AL.PETRESCU, P.ATHANASIU. Considerations on a viral respiratory epidemic in spring 1958 in the town and region of Botosani. St. cerc.inframicrobiol., 1961, 11, 4, 583.

In March-June 1958, a large number of acute respiratory syndrome in infants, with a high proportion of toxic forms and mortality, was registered in the town and region of Botosani. A non-hemagglutinating viral agent, pathogenic for the mouse, was isolated from the pharyngeal secretions of the sick children.

498.- AL.PETRESCU, P.ATHANASIU, S.CIRNARU, V.PANCU, I.VILCU-BOJINCA. Biologic characters of a virus isolated from infants with an acute toxic syndrome. St. cerc., infra-microbiol., 1960, 11, 4, 587.

A virus pathogenic for the mouse, new born rat, young guinea pigs and rabbits was isolated from children with an acute toxic respiratory syndrome. The virus was passed through the Seitz filter and stored in glycerine and by lyophiliza-

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tion; it resists to ultraviolet light and 56°C temperature. It is only slightly antigenic and non-immunogenic under the experimental conditions of the authors; it is pantropic and produces large lesions in the liver, lungs and kidney, both in man and animals.

499.- C.CONSTANTINESCU, F.PAUL, V.MARES, N.DRAGANESCU.
Infantile encephalopneumonitis caused by a large-sized viral agent. St. cerc. inframicrobiol., 1961, 12, 3, 389

A viral agent about the size of the ornithosis viruses, was isolated from the lung suspension of a case of infantile encephalopneumonitis in the white mouse. The viral agent isolated is pathogenic for the white mouse, both by intranasal and intracerebral inoculations, causing death of the animal within 4 to 7 days after inoculations.

Inoculated by intranasal route, it almost constantly induces encephalitic phenomena, characterized by convulsive fits, agitation and rolling over, followed by death.

Intracerebral inoculation is constantly followed by these encephalitis phenomena, maintained in all subsequent passages.

The histopathologic lesions in the mouse exhibit an aspect of interstitial pneumonia and meningoencephalitis.

500.- P.ATHANASIU, G.DOBRESCU, D.STRULOVICI, AL.PETRESCU, D.COSTANDACHE. Clinical and laboratory observations on some cases with an acute respiratory syndrome. Microbiol. parazitol., epidemiol., 1961, 4, 331.

Clinical and laboratory observations in 50 cases with an acute respiratory syndrome and a clinical diagnosis of influenza-interstitial pneumonia, also showed involvement of the liver. Attempts at isolation of the influenza virus remained negative.

From one case a viral agent, pathogenic for the mouse with a predominant tropism for the pulmonary and hepatic tissue was isolated; it was neutralized by convalescent serum.

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Cross seroneutralization was obtained with " Boto " virus isolated from infants with an acute toxic respiratory syndrome and presenting similar biologic characters.

Affection of the liver, manifested in man by clinical signs and laboratory tests, and in animals by deep alterations of the inflammatory type in the hepatic parenchyma, confirms on the one hand the identity of the etiologic agent in the two cases and, on the other, raises the problem of a possible subsequent evolution towards cirrhosis in man.

VIII

Animal viral diseases

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501.- C.SURDAN, E.DUMITRIU, C.CURE, M.WEGENER. Histologic modifications produced by the Aujeszky virus in various animal species (natural and experimental infection). Report read at the Conference of the Czechoslovakian virologists. Bratislava, 14-17 oct.1955.

In order to establish the histopathologic picture produced by the Aujeszky virus, investigations were carried out on 49 animals of various species, which died following the natural or experimental disease.

Lesions of the brain are represented by processes of meningo-encephalitis, cytonuclear degenerescence of the ganglionic and Purkinje neurons, with the presence of intranuclear inclusions. Processes of neuronophagia are seldom encountered.

Specific lesions of the neuro-vegetative system are represented by gliocyte infiltrations, cytonuclear degenerescence with intranuclear inclusions, partial or total chromatolysis and neuronophagia. Similar lesions are to be found in the cells of the neuronal capsules (amphicytes).

The medullar lesions are similar to those of the neurovegetative ganglia, but less intense.

Lesions of the splanchnic organs are represented by congestion, hemorrhages, lymphocyte infiltration and fatty degenerescence of the hepatic parenchyma, splanchnic hemorrhages, acute nephritis with fatty degenerescence of the urinary tubule epithelium and hemorrhagic glomerulitis, alveolitis and pulmonary interalveolar oedema, interfibrillar hemorrhage and degenerescence of the myocardiac fibers.

The severe lesions of the neuro-vegetative system explains to a certain extent the degenerative lesions of the splanchnic organs, the allarming clinical symptoms and swift death of the diseased animals.

502.- C.SURDAN, C.CURE, M.WEGENER. The role of pigs as Aujeszky virus carriers and eliminators. Report read at the Conference of the Czechoslovakian virologists Bratislava, 14-18 Oct. 1955.

In order to determine if healthy pigs can be Aujeszky virus carriers, a lung triturate of healthy sacrificed pigs was inoculated to rabbits, guinea pigs and dogs.

The pig lungs were virulent in 10 of 14 cases, producing the Aujeszky disease in 71.4 % of the inoculated rabbits, 50 % of the guinea pigs and 21.4 % of the dogs.

The researches carried out showed that in certain conditions healthy pigs can be Aujeszky virus carriers, at the level of the lungs, representing therefore the main virus reservoir during inter-epidemic periods.

503.- I.SUHACI, R.URSACHE, V.TONESCU. Notes on cultivation of the Aujeszky virus on chick embryos. St.cerc.infra-microbiol., microbiol., parazitol., 1956, 7, 1-2, 111.

An attempt was made to cultivate the Aujeszky virus strain on the chick embryo, by inoculation of the chorio-allantoic membrane (Burnet's technique), in the allantoic and amniotic cavities, or by intravenous and intracerebral route. The virus cultivates only on intracerebral inoculation.

The virus is readily adapted on the chorio-allantoic membrane after having been carried through 8 serial passages on the brain of 9 day chick embryos.

The microscopic lesions of the membrane and embryo are described; at first, congestive and hemorrhagic lesions, particularly at the level of the encephalon and skin, then pallor of the embryo and thickening of the membrane lesions, which become opalescent with disseminated and punctiform foci.

After 30 passages on the brain or chorio - allantoic membrane, no diminution of the virulence of the inoculated

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virus was observed, but on the contrary exacerbation of its pathogenicity for rabbits.

It therefore results that cultivation of the Aujeszky virus on the chorio-allantoic membrane yields a much richer harvest than its cultivation on rabbit brain and can serve as antigen for the preparation of a vaccine with a greater antigenic potential.

504.- C.SURDAN, C.CURE, M.WEGENER, E.DUMITRIU, A.ELEFTERESCU, A.LOZINSCHI. Epizootologic, anatomo-clinical and experimental study of Aujeszky's disease. St. cerc. infra-microbiol., microbiol., parazitol., 1956, 7, 3-4, 355.

Following investigations on the source of infection that gave rise to an Aujeszky epizootic in carnivorous animals, the Aujeszky virus was isolated from the lung of healthy pigs in 10 of 14 cases. On the basis of these data showing that healthy pigs can be Aujeszky virus carriers in the latent state, the authors sustain that the pig represents an important natural virus reservoir.

Investigations on the possibility of adapting the Aujeszky virus strains to various animal species led to adaptation and fixation of two strains to the white mouse and to 4-12 days chickens. Adaptation was done by intracerebral inoculations. Negative results were obtained in the trials at adapting the strains to pigeons and guinea pigs.

The hematologic study carried out on naturally or experimentally infected dogs or cats showed that infection with the Aujeszky virus brings about marked leukocytosis (in the mean 33,532 leukocytes/ml), with neutrophils, lymphopenia, aneosinophilia and abasophilia, together with cytonuclear, vacuolar degeneration of the granulocytes and monocytes.

The authors show that: a) pruritus acts as a leukogenic factor of the first importance; b) a parallelism exists between the hyperleukocytosis and the evolutive stages of the disease; c) the degree of morphopathological changes in the neurovegetative system conditions the intensity of the hematologic modifications.

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The anatomo-pathologic modifications in animals which died following the infection with the Aujeszky virus were represented by congestion and hemorrhages in all the tissues, hepatitis, acute nephritis, myocarditis and non-purulent meningo-encephalomyelitis.

In the central nervous and neurovegetative systems, congestive and hemorrhagic processes, gliocytic infiltrations, neuronal cyto-nuclear degenerescence with the presence of Hurst-Nicolau inclusions and rare neuronophagia are to be found.

- 505.- V.TOMESCU, L.PASCU, N.CARP, E.EDU, S.TIBREA, V.DOHOTARU. Experimental preparation in horses and pigs of serum against Aujeszky's disease. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 9, 43.
- Rev.Sci.Med., 1959, 4, 135.

The experiments carried out showed that a serum against Aujeszky's disease can be prepared both in horses and pigs.

It is preferable to prepare this serum on horses, since these animals support hyperimmunization better and yield an active serum, if the supernatant fluid of the virulent tissues triturate, used as antigen, is kept at + 4°C and inoculated in small doses, starting with a dose that corresponds to 0.1g virulent tissue.

The Perminov and Demcenco neutralization method for titering the serum is both practical and accurate.

- 506.- ACAD.ST.S.NICOLAU, N.CAJAL, M.GRUJA. Study of the inclusions characterizing distemper. Bul.St.Acad.R.P.R. Sect. St.Med. 1950, 2, 10, 1263.

It was possible to reveal characteristic inclusions on numerous sections prepared from various organs collected from dogs with different forms of natural distemper, as well as from several ferrets to which the experimental disease was inoculated. The sections were stained by the Mann method. These spherical or oval inclusions measure up to 10 μ ; they

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are prevalent in the cytoplasm and are of the cyto-karyo-oikon type. They are to be found in large numbers in the gliocytes and exceptionnaly in the neurons, giving rise to what Nicolau names a gliocytonosis, in contrast to rabies where neurocytonosis may be observed.

507.- R.DINU. Research on epizootic hydropigenous neuroviro-sis in fish (infectious hydropisia). St.cerc. inframicrobiol., microbiol., parazitol., 1951, 2, 1-4, 43.

The clinical aspects of the disease are described and it is pointed out that the histopathologic studies reveal a meningo=encephalitis without microbial germs. This disease is manifested by infiltrative, degenerative and proliferative modifications of the central nervous system, accompanied by characteristic inclusions within the nuclei of the Purkinje neurons or mesocephalon.

The speciality literature has often incriminated a saprophyte microbe (pseudomonas or others) in the etiology of this disease. Its viral etiology is sustained.

As regards its pathogeny, this disease is interpreted as an affection of the nervous system. In the light of Pavlov's theories and on the basis of the great variety of symptoms, this thesis is corroborated by the constant presence of meningocapopharyngitis.

508.- ACAD.St.S.NICOLAU, GH.DINULESCU, I.RADULESCU, R.CONSTANTINU. Hydropigenous neuroviro-sis in fish. I.- General and epizootologic data on infectious "Hydropisia" of fish in the R.P.R. St. cerc. inframicrobiol., microbiol., parazitol., 1951, 2, 53-65.

An epizootologic study was carried out on infectious hydropisia in fish in the waters of the R.P.R., recording all the cases reported every year and month, in all the piscicultural centers.

The disease was first diagnosed in 1935 in carps, in

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the systematic ponds of a piscicultural center. There followed a violent outbreak in 1936. The disease appeared also in 1937 in a pond in the South of the country, where fish had been brought from a piscicultural center in which the disease had been reported in 1933. From there, hydropneumonia spread to the ponds along the Danube, affecting fishes of the carp and other species. The intensity of the disease varied from one year to the other and was reflected in the proportion of sick and dead fish, from 2 % - 20 % sick fish and 1 - 2 % dead fish up to 30 % - 80 % sick fish and 10 % - 30 % dead fish in the years at which the disease reached a high peak. A certain periodicity likewise exists in the yearly evolution of the disease, a peak being observable in the months of April and May.

From 1935 to 1951 the disease was more intense in the 1935 - 1937, 1941 - 1943, 1945 - 1947 periods and finally in 1949 and 1950. A maximum mortality rate was observed in 1936, 1941, 1945 and 1948.

509.- ACAD. ST. S. NICOLAU, GH. DINULESCU, R. DINU, M. SEPEANU-FIRICA, I. RADULESCU, R. CONSTANTINIU, N. VASILIU, O. MITROIU. Clinical study of hydropneumonia neurovirosis of fish. St. cerc. inframicrobiol., microbiol., parazitol., 1951, 2, 1-4, 67.

A clinical study was carried out on hydropneumonia neurovirosis in the following fish species: Cyprinus carpio, Carassius Gibelio, Haack Aspius Aspius, Idu Idus Haack, Abramis Brama L.

During the acute stage of the disease, the most accentuated symptoms are digestive disturbances with fluid in the cavities (polyserosity), icteric coloring of the mucosa and moderate lesions of the skin.

During the chronic period characteristic lesions appear, taking on various aspects, from hyperemic or hemorrhagic lesions to deep or superficial ulcerous wounds or trophic lesions.

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The neurologic examination shows participation of the nervous system (balance disturbances, enophthalmia, adynamia, syndromes of inadaptability, etc.).

Clinically, the disease appears as complex localized or generalized disturbances of certain organs, skin and nervous system.

The clinical and histopathologic examinations show that infectious hydropis of fish affects in the first place the nervous system, the tegumentary and visceral disturbances being secondary and, up to a certain extent, of trophic origin. The authors therefore propose that the disease should be named "epizootic hydropigenous neurovirosis of fish."

510.- ACAD.ST.S.NICOLAU, GH.DINULESCU, R.DINU, M.SEPERANU-FIRICA, O.MITROIU. Lesions of the central nervous system in hydropigenous neurovirosis of fish (infectious hydropis). St. cerc. inframicrobiol., microbiol. parazitolog., 1951, 2, 1-4, 77.

The varied symptomatology of the disease, which the authors have named hydropigenous neurovirosis reflects a nervous pathology. Since the nervous system had not been studied in this disease, the authors carried out investigations on 14 cases with definite participation of the central nervous system. Accentuated lesions of the degenerative and proliferative type can be found in the brain and spinal cord. The meninges are constantly affected by a process of diffuse meningitis and vascular lesions; inflammatory nodules with polynuclears, perineuronal satellitosis and neuronophagia were found in the nervous substance. The authors described in the nervous cell characteristic intranuclear inclusions, 0.5-2 μ in size, situated in certain areas (peduncle, the Purkinje cells in the cerebellar cortex). They were also found in the neurons of the retina.

The most frequent lesions were found in the region of the diencephalo-mesencephalon and the cerebellum. Peri-

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vascular infiltrations were observed in the spinal cord, as well as meningitis and arachnoiditis.

These findings allow the authors to assert that one of the primary processes in hydropigenous neurovirosis in fish is diffuse amicrobial meningo-encephalitis, with characteristic intranuclear inclusions that confirm the viral etiologic factor.

Fig. - ACAD. ST. S. NICOLAU, GH. DINULESCU, R. DINU, M. SEPEANU-FIRICA. Interpretations on the etiopathogeny of hydropigenous neurovirosis in fish. Stancercu inframicrobiol., microbiol., parazitologie, 1951, 2, 1-4, 85.

On the basis of clinical, anatomo-pathologic, experimental and serologic arguments, the exclusive microbial hypothesis in the problem of the etiology and pathogeny of hydropigenous neurovirosis in fish is invalidated. The authors sustain that the determinant factor in the etiology of this disease is a virus, the role of microbes of the *Pseudomonas* species or others being of secondary importance, similar to the role played by *Bacillus suis pestifer* and *suis septicus* in swine pest.

Describing the complex aspect of symptomatology and histopathology, the authors stress certain general manifestations such as disturbances of the defence and adaptation functions, metabolic and trophic disorders, as well as certain direct neurologic signs that depend upon modifications of the nervous system. On the basis of findings and data in literature, especially the investigations of the Soviet school, the conclusion is reached that the nervous lesions play a part in the ensemble of manifestations of the disease. The pathogeny of the disease, which the authors named hydropigenous neurovirosis of fish, finds a wider explanation when viewed from the angle of Pavlov's conceptions. The disease may be assumed to be induced by somatic and vegetative nervous disorders, which depend upon the multiple localization of the virus in the central

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and peripheral nervous systems and in the organs (to this medium, altered and sensitized by the virus, the pseudomonas added, determining part of the clinical and histopathologic aspects studied).

512.- ACAD.ST.S.NICOLAU, N.SEPTEANU-FIRICA, R.DINU, O.MITCOIU.
Hemagglutination in the hydropigenous neurovirosis of
fish. St. cerc.inframicrobiol., microbiol., parazitol.,
1952, 3, 1-2, 209.

A number of 99 hemagglutination tests were performed in 15 fish with hydropigenous neurovirosis, in various stages of the disease. Positive results were constantly obtained and the titer being higher when the antigen was obtained from a more acute stage of the disease. In this stage, the titers differ with respect to the organ tested. Thus, the hepato-pancreas yields positive reactions with a titer that attains 1/1,300, then follow in decreasing order the intestines, spleen, kidney, heart, skin and brain.

Hemagglutination-inhibition was obtained with the serum collected from diseased, chronic or convalescent fish. Hemagglutination did not occur with control antigens from healthy fish, neither did hemagglutination-inhibition take place with the sera of healthy fish.

These data represent a powerful argument, which lends support to the inframicrobial etiology of infectious hydropisia. The authors propose that hemagglutination and hemagglutination-inhibition tests should be used as diagnostic methods in hydropigenous neurovirosis of fish.

513.- ACAD.ST.S.NICOLAU, R.DINU, N.SEPTEANU-FIRICA, O.MITCOIU.
Histopathology of the peripheral nervous system in
hydropigenous neurovirosis in fish. St.cerc.inframicro-
biol., microbiol., parazitol., 1952, 3, 1-2, 210.

Previous works showed the presence of meningo-encephalomyelitis with inclusions in fish suffering from acute or chronic infectious hydropisia, determining the authors to name the disease "hydropigenous neurovirosis".

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New investigations complete and lend support to the hypothesis of the neuro-dystrophic pathogeny of the disease.

In the peripheral nervous system of the fish suffering from neurovirosis, inflammatory, degenerative and proliferative modifications are to be found along the nerves, as well as in the ganglia and roots. In the acute stage of the disease, the lesions are formed of congestive, hemorrhagic and perivascular infiltrations with lymphocytes and monocytes. In the chronic stage, proliferations of the Schwann nuclei and neuronal degenerations are added to the above lesions, followed by reaction of the Cajal cells and formation of residual nodules.

The conclusion is drawn that the lesions of the peripheral nervous system express septineuritic dissemination of the hydropigenous neurosis virus of fish; they consist in perineuritis with interstitial pleuritis and polyganglioradiculitis.

514.- ACAD. ST. S. NICOLAU, R. DINU, M. SEPEANU-FIRICA, O. MITROIU.
Morphology of the hydropigenous neurovirosis virus in fish, studied in the electron microscope ~~Communicable~~
 Acad. R. P. R., 1952, 22-24, 301.

Examination in the electron microscope of purified suspensions obtained from emulsions of internal organs, skin and brain from fish with hydropigenous neurovirosis led to the conclusion that this affection is caused by a spherical corpuscular virus. The size of this virus measured by shadowing, after gold metallisation, ranges between 40-50 μ .

515.- R. DINU, C. RADULESCU, C. ALBU, N. VASILIU, O. MITROIU, C. IACOB. Attempts at vaccination in hydropigenous neurovirosis in fish. Lucrările Sesiunii St. Sect. St. Med. Acad. R. P. R., 22-24 iunie 1954, 7ol.

Preventive vaccination in hydropigenous neurovirosis in fish was attempted with a vaccine prepared from the hepato-pancreas of fish, collected in the acute stage of the

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disease.

The 10 % emulsion, formulated 2 %, was administered by two routes. The oral route yielded no practical results; two parenteral administrations at 12 days interval yielded favourable results.

The morbidity rate in the vaccinated fish was 37 % as compared to 63 % in the non-vaccinated fish. 25 % of the vaccinated fish contracted a mild, non lethal disease. The attempts at vaccinothrapy failed.

516.- C.DINULESCU, I.RADULESCU, R.DINU, G.MARINESCU, N.VASILIU, C.ALBU, R.CONSTANTINIU, O.MITROIU, C.IACOB, C.ISBASESCU, E.NASTAC. New investigations on hydropigenous neurovirosis of fish in the Rumanian People's Republic. The works of the Scientific Session of The Medical Sciences Section, The R.P.R. Academy, 22-24 June, 1954, 665.

New data are reported regarding the epizootology, etiology, blood modifications, evolution of morpho-functional disturbances and attempts at vaccination in hydropigenous neurovirosis of fish, a disease described by the authors in a previous work.

517.- G.DINULESCU, G.MARINESCU, I.RADULESCU, N.VASILIU, O.MITROIU, R.CONSTANTINIU, C.ISBASESCU. Evolution of the morphopathologic picture of hydropigenous neurovirosis in fish. Lucrările Ses.Şt.Sect.Şt,Med.Acad.F.R.P.R., 22-24 iunie 1954, 689.

A morphopathologic study was carried out on various forms of the disease in 106 fish. The pathogenic agent penetrates into the intestine and passes through the lesion produced into the general circulation, where it affects the capillaries throughout the organism, determining by predilection lesions at the level of the skin epithelium and nervous system. Damage of the central nervous system produces neurologic and vegetative disturbances in regulation of the activity of the internal organs, thus contributing to

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the severe and sometimes lethal evolution of the disease.

518.- C.SERBANESCU, I.SUHACI, C.SURDAN, M.TAGA. Histopathologic lesions of the chorio-allantoic membrane and chick embryos produced by the Newcastle virus and the classical swine pest virus. Comparative study. St.cerc. inframicrobiol., microbiol., parazitol., 1951, 2, 1-2, 171 .

The histopathologic examination of the lesions that appear on chick embryos and membranes inoculated with the classical pest and pseudopest viruses does not always offer sure differentiation criteria in the first stage of infection (20-30 hours after infection).

Differentiation between the two strains is possible only in an advanced stage of infection (before or immediately after death of the embryo).

Both viruses produce hemorrhagic lesions, of variable intensity however, in all the tissues of the embryo and the chorio-allantoic membrane. The hemorrhagic diathesis in the plumose bulbi and the brain are much more accentuated in pseudopest than in the classical pest.

The histopathologic lesions produced by the pseudopest virus on the chorio-allantoic membrane during the last stage of the disease are characterised by: a) congestion of the mesodermal blood vessels and ectodermal capillaries; b) intense proliferation of the ectodermal c. epithelium; and cellular infiltrations; c) vacuolar degeneration and ballooning of the proliferative ectodermal layers, reaching necrosis; d) round oxyphil corpuscular formations within the degenerated cells, of variable size and frequency; e) proliferation of the ectodermal epithelium towards the interior without cellular degeneration; f) adenomatous infiltration, vascular congestion and round-cell infiltrations with prevalent lymphocytes and neutrophils in the mesodermal layer; g) in numerous cases, perinuclear infiltrations are observed around the mesodermal vessels and infiltrative elements with phenomena of nuclear degeneration.

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The histopathologic lesions produced on the chorio-allantoic membrane by the classical avian pest were characterized by necrotic lesions of both epitheliums, vascular degeneration without the presence of inclusions, edematous infiltration and congestion of the mesodermal vessels with the same tendency towards perivascular infiltration by karyolysis.

519.- ~~VL. WYNCHRADNYK, I. MARINOV, I. GHEORGHIU, AR. POPESCU.~~
Research work on swine antipest vaccination. St. cerc.
 inframicrobiol., 1950, 1, 1, 185.

A comparative study of the swine antipest vaccines inactivated with crystal violet, according to three different methods, and the adsorbed anavirus, prepared from the same virulent splenic extract, showed that the latter was more effective.

In the adsorbed vaccine, a vaccinal dose must contain at least 0.25 gm tissue, inactivation of the virus under the action of formol (1/1000) being obtained at 37°C or still better at 26°C during 48 hours, after which the product is completely innocuous.

Adsorption of the anavirus on aluminium hydroxide intensifies the immunogenic value of the vaccine, without influencing the intrinsic immunizing property of the antigen.

Adjustment of the pH between 5.0 and 7.0 and formol treatment before or after adsorption, do not seem to modify the immunogenic value of the recently prepared vaccines.

The immunity conferred by the adsorbed anavirus is gradually established and lasts at least 7 months. Within this period, the value of the immunity may decrease and re-present 4 months later approximately 20 % of the immunizing potential existing 45 days after vaccination.

520.- VL. WYNCHRADNYK, I. MARINOV, I. GHEORGHIU. Comparative investigations on the immunogenic value of swine antipest vaccines prepared from virulent spleen, liver or brain. St. cerc. inframicrobiol., 1950, 1, 2, 255.

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Five series of adsorbed swine pest anavirus were prepared from aqueous extracts of spleen, liver and brain.

Five parallel experiments carried out on 58 piglets showed that adsorption on aluminium hydroxide does not influence the differences that exist between the immunogenic value of virulent extracts of spleen, liver or brain.

After adsorption on aluminium hydroxide gel, the vaccines prepared from liver and brain have a lower immunogenic value than the adsorbed extract of formulated spleen.

As compared to the immunogenic value of the adsorbed splenic extract, the value of the adsorbed hepatic extract represents approximately 50 per cent and adsorbed brain extract only about 120 per cent of the immunizing value of the adsorbed splenic extract.

521.-VL. WYNCHRADNYK VL. I. MARINOV, I. GHEORGHIU, N. SIRBU.

Bactericidal action of tripaflavine and acriflavine

on Pasteurella in the blood used for hyperimmunization

of anti-septic serum. Producing pigs. Works of the

General Scientific Session of the R.P.R. Academy,

June 2-12, 1950, 1397.

Tripaflavine and acriflavine in 1/10,000 dilutions kills Pasteurella in swine defibrinated blood in 30 minutes at a temperature of +10°C, exercising no effect on the pest virus even after a 72 hour contact.

Serum producing pigs support pest blood treated with tripaflavine or acriflavine inoculated by intravenous route in doses of 10 ml per kg/body weight.

The titer of anti-pest serum is not influenced following treatment of the antigen with tripaflavine or acriflavine.

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522.- VL. WYNCHRADNYK, I. MARINOV, I. GHEORGHIU. Comparative investigations on the immunogenic value of the swine antipest vaccine. Bull. Stiint. Acad. R.P.R. Sec. St. Med. 1950, 2, 5, 455.

An investigation was carried out on the innocuity and immunogenic value of swine antipest vaccines from virulent blood, spleen and lymph gland extracts inactivated with crystal violet according to the Dorset-McBryde and d'Apice methods in comparison with extracts of the same organs, formulated and adsorbed on aluminium hydroxyde, according to Wynchradnyk's technique.

Six series of vaccines were tested in 8 parallel experiments from the view-point of innocuity on 197 piglets, and from the view-point of the immunogenic value on 185 piglets. All the series were avirulent, except one prepared from organic extracts according to the Dorset-McBryde method.

The vaccine prepared from virulent extracts, formulated and adsorbed on aluminium hydroxide was superior to the stained vaccines, both as regards immunogenic value and the bacteria-free aspect.

The crystal violet vaccine prepared from virulent blood according to the Dorset-McBryde method, is closer as efficacy to the formulated adsorbed vaccine, but only as regards its immunizing value. The vaccines prepared by d'Apice et al. have a lower immunogenic value, probably due to the reduced amount of antigenic substance injected.

523.- VL. WYNCHRADNYK, I. GHEORGHIU, T. ALBU. Preparation of swine antipest serum with the pest virus from blood infected with Pasteurella, salmonella or coccaceae and formulated "in vitro". St. cerc. inframicrobiol. microbiol., parazitol., 1951, 2, 1-4, 183.

Formol added in a proportion of 2 %, inactivated, after 3-7 days contact at a temperature of about +10°C, the pasteurella, salmonella or coccaceae from the defibrinated pest blood, without influencing the immunogenic value

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of the pest virus. At the same time, formol in end concentrations of 2 % contributes to a favourable storage of the red blood cells.

Hyperimmunized pigs support intravenous inoculation of blood infected with pasteurilla, salmonella or coccaceae well, if it is injected 8-14 days after formol treatment.

Formol treatment of defibrinated pest blood, infected with the foregoing microflora, in view of its use as an antigen in pigs producing antipest serum, is more economic and yields better results than tripaflavine and acriflavine used for the same purpose.

524.- S.MIHAITA, V.TOMESCU, I.SUHACI, I.ISOPESCU, L.PASCU, M.POPA. Experimental researches on the use of anti-swinepest vaccine inactivated with crystal violet. St. cerc. inframicrobiol., microbiol., parazitol., 1954, 5, 3-4, 435.

The animals inoculated with anti-swinepest vaccine prepared from virulent blood inactivated with crystal violet, do not eliminate the pest virus, since the control animals that were put during 21 days together with the vaccinated pigs did not present any disturbances.

The anti-swinepest vaccines inactivated with crystal violet are not harmful; massive doses inoculated to pigs do not induce the disease.

A comparative study of the immunogenic value of various anti-swinepest vaccines with crystal violet showed that the vaccine prepared according to the Soviet method yields the best immunizing effect, being superior to the American (Dörset McBryde), Brazilian (D'Apice) and Hungarian vaccines.

Similarly, comparing the immunogenic value of the vaccine prepared with crystal violet according to the Soviet method and that of the vaccine prepared today at the Institut Pasteur (formolated and aluminium hydroxide adsorbed vaccines), it was found, on the basis of preliminary investigations, that the immunogenic value of the former vaccine

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was superior or at any rate equal to that of the formulated adsorbed vaccine. It is therefore advisable to prepare from the organs not only the formulated adsorbed vaccine, but also the crystal violet inactivated vaccine from virulent blood so as to obtain the amount of vaccine necessary for a successful control of swinepest in the country.

525.- S.MIHAIITA, M.POPA, V.TOMESCU, L.PASCU, I.GHEORGHIU, P.ONCIOIU, I.MARINESCU. Anti swine plague vaccine prepared from virulent blood inactivated by crystal violet. Experimental study and preliminary results obtained in practice. St. cerc., inframicrobiol., microbiol., parazitol., 1956, 2, 1-2, 119

The anti swine plague vaccine prepared from virulent blood inactivated with crystal violet according to the Soviet method (Kulesko) has yielded better results, with regard to the immunity conferred than the vaccines prepared with crystal violet according to the Dorset McBride (U.S.A.), d'Apice (Brazil) and Hungarian methods.

The vaccine prepared according to the Soviet method confers solid immunity to the vaccinated pigs, tested both by experimental challenge infection and by the natural disease.

The immunity conferred by this vaccine lasts at least 11 months.

Certain series of vaccine were still effective 9-10 months after their preparation.

The vaccine is not harmful, since inoculated to pigs in large amounts (100-200 cm³) it does not produce the disease, and the vaccinated animals are not virus eliminators, since the controls which were put together with the pigs that had received massive doses of vaccine, remained healthy even after 21 days.

The vaccine prepared according to the Kulesko formula and modified by the authors, who introduced the use of glycerin or of aluminium hydroxide, was demonstrated in experimental investigations to be just as effective as Kulesko's

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vaccine. The comparative study is still continuing.

The anti swine plague vaccine prepared from virulent blood inactivated with crystal violet according to the Soviet method of Kulesko has the same efficacy as the anti swine plague vaccine prepared from extracts of infected organs, formulated and adsorbed on aluminium hydroxide and used at present in the country.

Practical application of the crystal violet vaccine is recommended, next to the adsorbed vaccine, thus making full use of the virulent blood from the animals used at present for preparing adsorbed vaccine.

526.- S.MIHAITA, I.GHEORGHIU, P.ONCIOIU, M.POPA, T.ALBU, I.MARINESCU. Observations on the duration of active immunity conferred by aluminium hydroxide adsorbed anti-swinepest vaccine. St. cerc., inframicrobiol., microbiol., parazitol., 1957, 8, 2, 221.

The anti-swinepest vaccine prepared from emulsions of infected organs, inactivated with formol and adsorbed on aluminium hydroxide, confers to vaccinated pigs solid (80-100%) and lasting immunity (more than 10 months) when the animals are in a normal state of health; the degree of immunity conferred depending to a great extent on the upkeep of the animals.

Vaccinated sows, in the last phase of gestation, are more sensitive to control infection, already five months after vaccination.

527.- S.MIHAITA, V.STOICAN. Effect of sodium merthiolate on the swine pest virus. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 4, 581.

The swinepest virus contained in virulent blood and submitted to the action of sodium merthiolate in 1/1000 concentrations maintains its virulence even after 398 days contact, inducing the disease in receptive pigs even in 1/1,000,000 dilutions.

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A slight modification in the evolution of the disease (prolongation of the period of manifest disease) induced by the 1/1000 sodium merthiolate treated virus is observed as compared to the disease caused by the non-treated virus.

The swinepest virus that is not treated with antiseptics produces the disease with a lethal evolution up to 398 days after harvesting, in a 1/1,000,000 dilution.

528.- S.MIHAIITA, M.POPA, L.PASCU, I.GHEORGHIU, A.ELEFTERESCU
Experimental investigations on application of the lapinized swinepest virus in active antipest immunization in pigs .(Preliminary note). Report read at the Session of the Institute of Inframicrobiology of the R.P.R. Academy, September 9, 1957.

The authors carried out experiments with the Koprowski strain of the lapinized virus, received from the Zemun Institute, Belgrade.

The lapinized virus from rabbits bled during ascension of fever (3-5 day after infection) immunized 80-100 % of the pigs, whereas the virus taken from rabbits without fever conferred immunity in 0-66% of the animals. The results obtained were more constant with intramuscular infection of rabbits, although a similar result was obtained by intravenous route.

The lapinized virus inoculated to healthy pigs, receptive to swinepest, confers solid immunity which cannot be overcome by the control infection with 1 million pathogenic virus lethal dose, beginning 10 days after vaccination. Application of antipest serum simultaneously with the lapinized virus does not prevent the establishment of immunity following vaccination.

A vaccination of pigs with the lapinized virus gives rise to virus carriers and eliminators, detectable by the acquired immunity of over 30 % of the controls put together with the vaccinated pigs.

According to the authors the state of virus eliminators does not arise in the case of association of antipest serum, the controls not becoming immune.

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529.- I.GHEORGHIU, S.MIHAIITA, P.ONCIOIU, T.ALBUR, M.POPA, M.ALBORIU. Contributions to the study of immunity in swinepest. St. cerc.inframicrobiol., microbiol., parazitol., 1958, 9, 1, 65.

The passive immunity conferred by the swine antipest serum lasts at the utmost 12 days after serum immunization.

Serum immunization ensures a 100 % protection when the serum is inoculated together with the virus and only a 65-80 % protection when the virus is inoculated subcutaneously (approximately 1 million LD) or when contact occurs in an intensely infected surrounding.

From the 14th day onward, the protection conferred by the serum against the infection practiced in the same conditions is nil. Of 22 animals infected between the 14th and 51st day, a single animal remained healthy and was considered as having a natural resistance. The protective value of the serum mixed with aluminium hydroxide is not of long term and animals thus serum-immunized and test-infected on the 42nd, 30th and 21st day were just as sensitive as the normal animals.

Sero-vaccination done simultaneously at the same point of inoculation or at separate points ensures active immunity only in about 62 % of the animals. Vaccination performed after serum immunization (after 7-20 days), confers active immunity only in about 78 % of the animals, even when the vaccine dose is repeated.

Serum immunization practiced 7 days after vaccination inhibits active immunity in 34 % of the animals, but 14 days after vaccination it has no longer a negative influence, 100 % of the animals resisting the control infection. Under these conditions, the well developed animals weighing about 40 kgs are better immunized than badly developed animals (about 25-35 kgs).

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530.- I.GHEORGHIU, S.MIHAI, T.ALB, M.POPA. Effect of freezing and melting on the adsorbed formulated anti swinepest vaccine. St. cerc., inframicrobiol., microbiol., parazit., 1958, 2, 3, 199.

The immunogenic property of the adsorbed formulated anti swine-pest vaccine is hardly modified following total freezing and melting. This property may however be reduced by about 25 % when the vaccine is frozen and melted once or 5 times, successively.

Neutralization of free formol from the vaccine with ammonium before freezing does not seem to have an additional effect in maintaining the immunogenic property of the vaccine.

The vaccine, after 7 days melting at $+4 - 8^{\circ}\text{C}$, does not modify its immunogenic value as compared to the vaccine used immediately or 24 hours after melting. If such a vaccine is kept however 7 days at $+16 - 18^{\circ}\text{C}$, there is a slight decrease of its immunizing property.

The results obtained with the melted vaccine, which was intensely stirred for a long time (210 minutes), are equivalent to those obtained when the vaccine was stirred only until it became homogenous (5 minutes before use).

Subcutaneous inoculation of pigs sensitive to pest with 5, 10, 20, 50 and 100 ml doses of vaccine, totally frozen or melted one or 5 times, did not reveal the presence of the live virulent virus, not even when the free formol was neutralized. None of the pigs vaccinated in this way manifested any thermal reaction or morbid symptoms 21 days after vaccination.

As it is not possible in fieldwork to control the number and duration of the freezing procedures, this means of maintaining the vaccine cannot be advocated.

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531.- I.GHEORGHIU, T.ALBU, S.MIHAIITA, M.STANCA, A.NICA.-

Researches on the factors which condition the immunizing value of the anti swine-pest vaccine inactivated with crystal violet. St. cercat. inframicrobiol., microbiol., parazitol., 1958, 2, 3, 351.

The anti swine-pest vaccine prepared from virulent blood inactivated with glycerinated crystal violet, maintains its immunogenic property unchanged at least 10 months after its preparation when it is stored uninterruptedly at a temperature of $+4$ to $+8^{\circ}\text{C}$ and even when it is maintained 15 days at a temperature that does not exceed 26°C in the course of the 10 months.

From 10 to 14 months after preparation (the final term of the control) the intensity of the immunity conferred begins to decrease in terms of the lapse of time after the preparation and storage conditions (the decrease is more accentuated when the vaccine is stored 15 days at $+18$ to $+24^{\circ}\text{C}$ and particularly at 26°C).

The intensity of the immunity in the vaccinated pigs also depends upon a number of factors linked to the reactivity of the organism to the antigen. These factors may be partly detectable following vaccination, with a vaccine stored 10 months after preparation and the manifestations observed vary with respect to the origin of the vaccinated pigs, the group of pigs and individual reaction.

532.- V.TOMESCU, S.MIHAIITA, L.PASCU, I.GHEORGHIU, M.POPA, S.TIBREA, A.ELEFTERESCU. The results obtained in the RPR with the lapinized pest virus in the control of swine pest. Report read at the Conference of Czechoslovakian virologists 14-17 October 1958, Bratislava.

Vaccination of pigs with the lapinized virus confers protection against swine pest to 80 % of the animals, even in extremely contaminated surroundings.

Simultaneous application of the virus and of hyperimmune serum confers protection to 95-100 % of the vaccinated animals.

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Inoculation of the lapinized virus without the anti-pest serum in receptive pigs, may be followed by elimination of this virus into the outer medium, contact immunization of more than 30% of the non-vaccinated pigs being a proof of this finding.

In an environment that is not contaminated by swine-pest, the healthy animals acquire solid immunity. Post-vaccinal reactions are, in such cases, rare and benign.

In the deficient pigs, immunity is poorer and post-vaccinal losses higher (15-20%).

In the recently infected units, the evolution and spread of the disease can be arrested by serovaccination of well kept healthy pigs, and by application of veterinary-sanitary measures.

533.- I.GHEORGHIU, S.MIHAIITA, T.ALBU, M.STANCA, M.POPA.

Determination of the moment at which active immunity is established in pigs vaccinated against the pest with a formulated adsorbed vaccinia. St. cerc. infra-microbiol., 1959, 10, 1, 63.

Pigs sensitive to the pest, weighing 35-40 kg, vaccinated by subcutaneous route with 20 ml antipest tissular vaccine, formulated and adsorbed on aluminium hydroxide, become intensely immune against this viral disease.

Immunity sets in within 13 days after vaccination. After this moment, the pigs vaccinated in the above conditions and submitted to severe infection, either by inoculation of 1 ml blood (approximately 1 million LD) or by contamination in intensely infected surroundings, resist this infection, without presenting any kind of clinical reaction.

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534.- R.PORTOCALA, N.CAJAL. Research-work on avian pest.
 I.- Histopathologic study of the experimental disease
in mice. St. cerc. inframicrobiol., 1960, 1, 1, 165.

A study was carried out on the histopathologic modifications that appear following intracerebral inoculation of an avian pest virus strain, adapted to mouse brain.

In the central nervous system, the most intense cellular lesions are to be found at the level of Ammon's horn, where the neurons suffer various degrees of degenerescence reaching the stage of neuronophagia. In the nuclei of these neurons, abundant virus colonies are to be found and in their midst characteristic inclusions. In the remaining encephalic parenchyma, the virus manifests its pathogenic activity particularly against the neurons of the basis.

In the cerebellum, the virus is localized in the Purkinje cells, where it determines the appearance of characteristic intranuclear inclusions. At the level of the spinal cord, colonies of inframicrobes and characteristic inclusions can be seen in the nuclei of the posterior horns.

In the central nervous system, besides the neuronal lesions, some of the glial cells and of the connective cells are invaded by the virus.

On the basis of these observations, the authors consider that the neurotropic strain of the avian pest virus used forms part of the group of pantropic viruses.

535.- I.SUHACI, C.SURDAN, M.TAGA, S.MIHAIITA. Investigations
on avian pest. St. cerc. inframicrobiol., 1950, 1,
 2, 207.

The present paper deals with the characters of the avian pest virus strains isolated in the R.P.R. and studied by means of hemagglutination, hemagglutination-inhibition, crossed serum neutralization and immunity tests.

These investigations showed that except for strain 863, that exhibited the characters of the classical avian pest virus, all the other recently isolated strains presented the characters of a pseudo-pest virus (Newcastle virus).

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Hemagglutination and hemagglutination-inhibition techniques were developed with a view to titrating the strains and avian anti-pest serum and for the diagnosis.

In order to prepare a vaccine, the pseudo-pest virus was cultivated on the chorio-allantoic membrane and chick embryo, according to a personal method of the authors. The vaccine prepared contained 15-20 % antigenic mass (embryo and membrane triturate), diluted in allantoic - amniotic fluid and normal saline. The virus suspension was adsorbed on aluminium hydroxide prepared according to the Goret technique.

The virulent suspension (10^{-7} titer) and aluminium hydroxide in equal parts, formulated 5 % and maintained 10 days at $+4^{\circ}\text{C}$, formed the avian anti-pest vaccine, which was applied preventively to more than 10 million birds with good results.

The authors likewise prepared an avian anti-pest serum by hyperimmunisation of turkeys, serum which possesses preventive and even curative properties.

536.- I. SUHACI, C. SURDAN, M. TAGA, S. MIHAITA. Investigations on the avian antipest vaccine. Bul. St. Acad. RPR, Sect. St. Med. 1950, 2, 5, 379.

Investigations were carried out with a view to producing the $\text{Al}(\text{OH})_3$ adsorbed avian antipest vaccine on an industrial scale, according to the Traub technique, modified both as regards the method of inoculation and determination of the dilution required for producing death of the embryos in a given interval, without it being any longer necessary to control the viability of the embryos every 3 hours. Consequently, the virus content of the various parts of the embryonated egg, also making use of the allantoic-amniotic fluid as viral mass, was determined, as well as the minimal dose antigenically required for obtaining a solid immunity of long duration.

A comparative study was made for determining the adsorption capacity of $\text{Al}(\text{OH})_3$ gel prepared by the Wilsträtter

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method and that prepared by the Goret-Georgescu or iron hydroxide xide method; the latter showed no adsorbing capacity.

The amount of formol necessary for inactivating the virus in the vaccine and maintaining its immunogenic capacity was likewise determined.

The hemagglutination and hemagglutination-inhibition test were used both for determining the titer of the antigenic suspension employed in the preparation of the vaccine and for determining the adsorbing capacity of the $Al(OH)_3$ gel.

The authors show the results obtained in field work after inoculation of over 3 million doses.

537.- C.SURDAN, I.SUHACI, MIRCEA TAGA. Study on the classification of avian pest strains. The works of the General Scientific Section of the R.P.R. Academy, June 2-12, 1950, 1255.

Avian pest was introduced in Rumania in 1941 by the German troops. The virus isolated during this epizootic was identified as the classical avian pest virus. The strain isolated was designated as "strain 863".

Between 1943 - 1950 the epizootics regularly succeeded each other every year, producing important economic losses. During these epizootics only pseudopest virus strains were isolated, definitely different from the 863 strain, from the epizootologic, clinical, anatomo-pathologic, serologic and immunologic view points. Active monovalent immunity does not confer protection to chickens against the control infection with the heterologous virus, but confers solid immunity against infection with the homologous virus strain. This likewise occurred in passive immunity. From the view point of the hemagglutination inhibition potential, the monovalent hyperimmune sera have a powerful action against the homologous viruses and a much weaker action against the heterologous viruses.

Normal hen and turkey sera do not inhibit these two virus varieties. Experiments carried out on 12 day chick embryos show that monovalent hyperimmune sera possess a strong

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neutralizing action against the homologous viruses of the classical and pseudo-pest. Its activity is very poor or inexistent with regard to the heterologous virus. No differences were observed in the antigenic, serologic and immunologic properties of the numerous pseudopest strains studied from the view point of the variability of their virulence and hemagglutinating titre. In avian antipest vaccination only pseudo-pest strains are currently used as antigens in R.P.R. with excellent results.

538.- C.SURDAN, I.SUHACI, M.TAGA, A.DUMITRESCU. Study on the preparation and use of the avian antipest serum, An. Acad.R.P.R., Sect. St.Med. 1950, 2, mem.27, 985.

An avian antipest immune serum is obtained by hyperimmunization of adult turkeys.

The hyperimmunization lasts 110 days. The total amount of serum obtained from one turkey by repeated bleeding is 320-400 ml.

The prophylactico-therapeutic value of the avian antipest serum obtained was assessed by comparison with the "Phylaxia" avian antipest serum produced in the P.R. of Hungary.

The avian antipest serum obtained has an average hemagglutino-inhibiting titer of 1/640 against the pseudo-pest strains and 1/80 against the classical pest strains.

The serum inoculated to chickens weighing 800-1,000 gm., in 2 ml doses, 36 hours before the challenge injection protects them against 10,000,000 MLD pseudo-pest virus. Simultaneous inoculation of the avian antipest serum and pseudo-pest virus is not effective, as the virus is not neutralized "in vivo".

Application in the field, in various epizootologic conditions, shows that the avian antipest serum inoculated intramuscularly in 1-2 ml doses to adult healthy hens in avian pest foci protects them in a proportion of 90,53 %; intravenous or intramuscular inoculation of 2 ml doses to hens at the beginning of the disease has a curative action in 60 % of the cases; inoculation by the same routes and in similar doses to hens 2-3 days after the onset of the disease has a curative

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action only in 38.47 % of the cases. The serum has no effect on hens exhibiting nervous symptoms.

The duration of passive immunity is 6.8 days. For an effective control of avian pest, antipest vaccination applied 3-5 days after serumization has yielded very good results.

539.- M.TAGA, I.SUHACI, C.SURDAN, S.MIHAITA. Study of the hemagglutination (H.A.) and hemagglutination-inhibition (H.A.I.) reactions in avian pest. Bul. St.Acad. R.P.R., Sec.-.Stiințe Med. 1950, 2, 5, 445.

The hemagglutination test constitutes a readily applied and precise method for the qualitative and quantitative investigations of avian and pseudopest viruses, provided it is carefully performed in order to avoid errors.

The differences between the virus content of the materials investigated, can be established by calculating the hemagglutinating titer of the respective material, in comparison with a material with a known titer and also by H.A.I. test, comparing the H.A.I.titer of a known strain with that of the strain to be determined.

The H.A. test determines the virulence of the material used for preparing vaccines. The hemagglutination reaction determines accurately the power of adsorption of $Al(OH)_3$ with respect to the virulent product used for preparing the vaccine. The adsorbing capacity of $Al(OH)_3$ can likewise be determined by the quantitative variation of the virulent product up to saturation.

The H.A.I. test is an accurate method for titering the avian antipest serum. It is likewise a practical and precise method for determining the onset, degree and persistence of immunity in the vaccinated birds. By means of this test, the pseudopest strains can be differentiated from the classical pest strains. The H.A.I. test is a practical laboratory method for the diagnosis of avian pest, employing the blood serum from sick birds or centrifugation of triturations from the organs of dead birds.

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540.- I.SUHACI, C.SURDAN, M.TAGA, CECILIA SERBANESCU.

How to establish moment of appearance and duration of immunity conferred by anti-avian pest vaccine.

St. cerc. inframicrobiol., microbiol., parazitol., 1952, 3, 1-2, 81.

An attempt was made to establish the moment at which immunity appears and its duration by means of the HAI test and experimental control infection of hens at various intervals after vaccination with an anti-avian pest vaccine prepared by the authors. Moreover, a possible parallelism between the appearance and duration of HAI antibodies and protector antibodies was studied.

It was found, however, that no such relationship exists, as HAI antibodies appear more swiftly, 3-4 days after vaccination, whereas the protector antibodies cannot be revealed before the 6th day. After attaining maximum values 16 to 75 days after vaccination, the HAI antibodies return to initial titers after 190-200 days.

In contrast, the protector antibodies appear later, but stay elevated at much higher titers even 7 months after vaccination.

Despite its high HAI titer, the anti-avian pest vaccine, prepared on mammals or geese, has a low neutralizing effect accounted for by the absence of a parallel relationship between the HAI and protector antibodies.

This constitutes a serious argument in favour of the tissular nature of immunity in avian pest.

541.- C.SURDAN, I.SUHACI, M.TAGA, S.MIHAIITA. Study on the preparation of avian antipest serum on mammals and geese. St. cerc., inframicrobiol., microbiol., parazitol., 1952, 3, 3-4, 17.

Immune avian antipest serum was obtained by hyperimmunization of pigs, sheep and geese.

Specific antibodies appear 1-20 days after the first inoculation, then increase following subsequent inoculations

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staying level at a threshold (1/1260 +++++), that cannot be exceeded.

Although the HAI titer of the avian antipest sera prepared in pigs, sheep and geese is 1/1280 +++++ up to 1/2560 ++ and therefore superior to the titer of the serum prepared on turkeys (1/640++++ and 1/1280 +) they do not give protection in 0.2 ccm doses to chick embryos against a control infection with 10-10,000 minimum LD/homologous avian pest virus; the same amount of immune avian antipest serum prepared on turkeys confers immunity against a 10-100 minimum LD homologous virus.

The sera prepared on pigs, sheep and geese, in 0.5 - 2 ccm doses, do not protect chickens against a 10-1,000 minimum LD homologous virus, whereas the immune avian antipest serum prepared on turkeys and inoculated in the same amounts protects them against the same LDs. in 100 per cent of the cases.

Although the sera prepared on pigs, sheep and geese strongly inhibit in vitro the HA reaction, in vivo they have no preventive or therapeutic action.

542.- I.SUHACI, M.TAGA. Anti-avian pseudopest vaccination with the attenuated virus (strain H). St. cerc., in-framicrobiol., microbiol., parazitol., 1954, 2, 3-4, 425.

Evidence is brought that the Hertfordshire avian pest virus strain, controlled as regards its innocuousness for chickens and hens, hemagglutination action, infectivity for embryos, failure to spread from vaccinated to susceptible birds and its immunogenic potential, is proper for practical use in the prevention and control of avian pest.

A brief description is given of the technique developed for the wide-scale preparation of the attenuated live virus, and of the results obtained after inoculation of over 15 million birds with this live vaccine. These results fully justify the hope that the last remnants of avian pest in the country will soon be stamped out.

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- 543.- P.ATHANASIU-STROESCU, AL.PETRESCU, M.GRUIA. Attempts at directed variation of the avian pest virus. (Strain 863 adapted to mice). St. cerc., inframicrobiol., microbiol., parazitol., 1957, 8, 3, 379.
 - Voprosii Virusologii, 1959, 1, 76.
 - Rev.Sci.Med., 1959, 4, 11.

Strain 863 of the avian pest virus adapted to mouse brain was to be found after death of the animal in the brain, suprarenal and parotid glands, as well as in the vegetative nervous system, in which however histologic lesions could not be detected. The triturate of organs did not give positive hemagglutination reactions with hen red blood cells.

Serial passage on this strain by cerebral route to suckling rats yielded a mortality of 50 % in the course of the first 10 passages, after which no pathologic symptom appeared during the following 13 passages. The avian pest virus, although present during this period in the apparently healthy suckling rats, both in the central nervous system and in the vegetative system, the suprarenal and parotid glands, is so much attenuated that it gradually loses its pathogenic potential for mice until it disappears and remains weakly pathogenic only for chick embryos. Cultivation of this attenuated virus on chick embryos results in increase of virus pathogenicity, both for the chick embryo and for the mouse. The authors conclude that in nature the avian pest virus probably suffers similar variations in passing through less receptive organism and emit the hypothesis of a natural reservoir of viruses among unapparently sick rats.

- 544.- I.SUHACI, R.URSACHE, E.POPA. On the preservability of the Hertfordshire strain of the avian pseudopest virus. St. cerc., inframicrobiol., microbiol., parazitol., 1957, 8, 2, 213.

In order to establish the conditions in which the attenuated Newcastle virus can be applied, the value of

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the virus stored at various temperatures, with or without sodium merthiolate was investigated.

Parallel studies were carried out on the viability of the virus after storage at various temperatures (-18° , $+4^{\circ}$, $+18^{\circ}\text{C}$) and for different intervals of time in which the virus maintained its hemagglutinating activity and its pathogenicity for the embryo.

At -18°C , the virus stored in the form of allantoic-amniotic fluid, maintains its viability more than 330 days, both in the presence or absence of 1/2,500 sodium merthiolate.

At $+4^{\circ}\text{C}$, pathogenicity of the virus for the embryo begins to decrease after 330 days storage.

At $+18^{\circ}\text{C}$, the virus without merthiolate remains viable 52 days; its viability disappears after 96 days.

A high concentration (1/100) of sodium merthiolate kills the virus even after 52 days storage in the icebox ($+4^{\circ}\text{C}$).

545.- I.SUHACI, D.NEDELICIU. Determination of the moment of appearance and duration of resistance conferred by the avian "H" antipest vaccine. St. cerc., inframicrobiol., microbiol., parazitol., 1957, 8,3, 361.

Hemagglutino-inhibiting antibodies appear on the 5th day after vaccination with the avian H pseudopest virus and on the 7th day all the chickens present HAI antibodies.

The titer of these antibodies increases up to the 10th day and 3 to 4 months later shows the values found on the 6th day.

A state of resistance to experimental infection appears in 50 % of the chickens 48 hours after vaccination, in 75% after 72 hours and after 4 days all the chickens vaccinated resist to the control infection. This early resistance is not due to immunity proper, but rather to the phenomenon of interference.

Seven months after vaccination, the state of resistance, which can now be called immunity, still exists.

There is no parallelism, however, between the HAI antibody titer and that of protector antibodies.

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546.- I.SCHACT, D.NEDRICI. Correlation between the infecti-
v and hemagglutinating potential of various avian
pseudopest virus strains. An. Inst.Pasteur, Bucharest,
 1957, 2, 75.

A study carried out on 4 virulent and 2 attenuated strains of the Newcastle virus, showed that certain differences exist, as regards their resistance to heat. This resistance does not depend upon the pathogenicity of the strain.

The action of heat is reflected by a change in pathogenicity of the strain.

The action of heat is reflected by a change in pathogenicity and hemagglutination, but as a rule an interval is observed between the appearance of the pathogenicity function and that of the hemagglutination function. Only exceptionally is the contrary case encountered, but the differences between the resistance of the two functions are extremely small in such cases.

In view of the fact that after the action of heat the pathogenicity function is predominant, but that after a longer standing of the virulent fluids no net interval is observed between the two functions during 360 days, any strain whose hemagglutinating activity is still detectable in the interval of 360 days, can practically be considered as viable.

The fact that among the various strains of the Newcastle virus there are some fairly resistant to heat indicates the advantage of choosing the latter in the preparation of attenuated live vaccine, for a better storage in the hot season.

547.- Y.COPELOVICI, M.CEPLERANU. Investigations on the ac-
tion of ribonuclease in the development of the New-
castle virus in embryonated and desembryonated eggs.
Study of the hemagglutinating properties. Report read
 at the session of the Institute of Inframicrobiology
 of the R.P.R.Academy, July 31, 1958.

Ribonuclease introduced into the embryonated and desembryonated egg in the first 2-3 hours after inoculation of the Newcastle virus inhibits the hemagglutination potential of the virus. The action of ribonuclease is more evident in the embryonated than in the desembryonated egg. It is limited being annulled 40 hours after its administration.

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548.- I. SUHACI, I. BRAN, V. TOMESCU, R. URSACHE, ECAT. POPA.

Observations on the vaccination of chickens against the Newcastle disease. Report read at the Congress

of Virology, Smolenice (Czechoslovakia), 1958.

In order to prevent epizootics of avian pseudopest in a few day-old chicks, investigations were carried out on the immunogenic capacity of the avirulent B₁ and F strains in about 800 chickens of various ages and by different routes

of inoculation.

The two strains are almost equal as regards pathogenicity for the embryo and hemagglutination titer, but strain B₁ is more immunogenic, particularly when the strains are carried through on 4 to 5 day old chickens.

More constant results are obtained in vaccination with the B₁ strain. Administration of the vaccine by:

- 1) respiratory route in the form of large aerosols;
- 2) nasal or ocular instillations;
- 3) intramuscular route and
- 4) digestive route, showed that best results were obtained

when the vaccine is administered in the form of aerosols, then by nasal or ocular route, followed by the intramuscular route and, finally the poorest results were obtained when the vaccine was administered per os in the drinking water.

The percentage of chickens resisting the control infection increased in direct proportion to the age at which they were vaccinated, which was still more evident when the chickens came from the eggs of immunized hens.

Adult hens can be successfully immunized with vaccine B₁, without showing post-vaccinal reactions manifested by nervous sequela or a decrease in egg-laying.

The duration of immunity conferred by vaccine B₁, varies in direct proportion to the age at which the vaccination was performed, from 2 months in vaccinated chickens to 6 months in the adult birds.

Vaccination by aerosols is the most practical method for prevention of pseudopest in the large socialist breeding farms.

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549.- I.SUHACI, V.TOMESCU, R.URSACHE. Contributions to the study of specific prophylaxis of fowl pox in Rumania. Monathefte für Veterinärmedizin, Leipzig, 1958, 13, 673.

By numerous passages on eggs taken from hens immunized against fowl pox, the hen fowl pox virus loses its capacity to induce generalized forms of fowl pox and can be used as a virus vaccine.

By passages on the chorio-allantoic membrane, the pigeon fowl pox virus acquires new antigenic properties, which bring it closer to the hen fowl pox virus. This can be used in practice in the preparation of a culture heterologous virus-vaccine, with which specific prophylaxis of hen fowl pox can be applied.

Study of immunologic correlations between the various fowl pox strains isolated from different bird species led to a new method for immunizing pigeons against fowl pox, making use of the turkey fowl pox virus as virus-vaccine.

550.- POSTROESCU. New data on the structure of Bollinger's corpuscles in fowl pox. Bul.St.Acad.R.P.R., Sec.-St. Med. 1951, 2, 3, 869.

Use of the tannin-argentic impregnation method, combined with the resistance of silver to uptake by iodine or a borax - potassium ferrocyanide mixture led to the observation and explanation of the genesis and evolution of Bollinger bodies in fowl pox.

It was established that in the cytoplasm of epitheliomatous cells there exist granulations identical to the elementary bodies described by Borrel, which then develop into rosettelike particles which are subsequently transformed into Bollinger bodies. At their level, there are numerous oxydase granulations, traces of thymo-nucleic acid due to virus colonies and ribonucleic acid, which shows that these particles have as substrate the cellular mitochondria on which the virus has multiplied. The mitochondria also multiply under the action of the virus and subsequently degenerate and are transformed into a protein component which forms the substra-

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te on which the virus develops and into a lipid component which degenerates into fats and fatty acids.

551.- I.SUHACI, C.SURDAN, M.TAGA, V.TOMESCU, C.SERBANESCU.
Investigations on fowl pox. St. cerc., inframicrobiol.,
microbiol. parazitol., 1952, 2, 3-4, 29.

Nine strains of hen, one strain of turkey and six strains of pigeon fowl pox virus, were isolated by cultivation on chick embryos.

Cultivation of hen and turkey fowl pox virus on embryonated eggs enhances the virulence and pathogenicity of the virus, both for the embryo and the adult bird. From the 10th passage, the embryos die regularly between the 3rd and 11th day.

Cultivation of pigeon fowl-pox virus increases the virulence and pathogenicity of the virus for the embryo and attenuates it for the adult bird.

Morpho-pathologic modifications, characterized by whitish opaque, zonal proliferation, hyperplasia, vacuoles and ballooning degenerescence of the ecto-endodermal cells, with numerous Bollinger corpuscles and oedematous infiltrations of the mesoderm, are constantly localized in the membranes and only seldom in the embryos. These exhibit lesions of generalized epithelioma.

No anatomo-pathologic differences exist between the strains investigated, but there is a net difference between the hen and pigeon strains from the antigenic view-point, demonstrated by cross immunity test in hens and pigeons.

The hen fowl pox virus, sensitized by homologous immune serum and inoculated by intradermal and subcutaneous route, confers solid immunity to receptive hens. The anti-fowl pox vaccine adsorbed and formulated 0.35 per cent, inoculated in 2 ccm doses by intramuscular route, does not confer immunity to receptive hens.

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552.- E.PASCU.- Investigations on the phenomenon of sensitization of the sheep pox virus. St. cerc., inframicrobiol., microbiol., parazitol., 1955, 6, 3-4, 453.

Testing the effect of the homologous immune serum on a highly virulent sheep pox virus strain, Bucharest pas.93, it did not change its behaviour to any extent, although at the 8th passage it was sensitized and used as a vaccine in field-work.

Donatien and Lestoquard attribute to every sheep pox virus 3 periods:

- a) a period of extreme virulence,
- b) a period of modifiable virulence,
- c) a period of declining virulence.

The problem arises of the period in which the action of the serum takes place, since strains with a very low virulence (Indochina, Périgeux), submitted to the action of the serum do not exercise a vaccinating effect and inoculated as such (lymph without serum), give intense reactions at the site of inoculation.

The virulent Bucharest strain can become sensitized at the 88th passage and later after another 5 passages on animals it maintains its extremely virulent character.

In the light of progressist Mitchurinist teaching, this phenomenon can be interpreted by the "theory of stage evolution" developed by Lisenko, i.e. at a certain stage of development the viruses are susceptible of undergoing modifications in their antigenic structure under the action of serum antibodies.

553.- I.SUHACI, R.URSACHE, C.SURDAN, V.TOMESCU. Use of the fowl pox virus cultivated on the chorio-allantoic membrane as antigen for the preparation of anti fowl pox vaccine. St. cerc., inframicrobiol., microbiol., parazitol., 1955, 6, 1-2, 119.

The fowl pox virus, cultivated on the chorio-allantoic membrane of the chick embryo is very rich in elementary

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bodies. The sterile vaccine can be stored in the form of congealed membranes, for at least 6 months without losing its virulence.

After drying, the characteristically modified membranes can be transformed into a fine, uniform powder, suspended in a solvent. It is relatively poorer in virus than the wet membrane from which it is obtained. After a 6 months storage it loses 10 % of its efficacy. Repeated passaging on the chorio-allantoic membrane of chick embryos increases the immunizing property of the pigeon fowl pox virus as compared to the hen fowl pox virus.

Vaccination of hens with the pigeon virus does not create foci of infection for hens, but may be the starting point of an epizootic among pigeons.

The vaccine prepared from wet membranes is much more active than that prepared from dry membranes.

The anti-fowl pox vaccine prepared with the virus cultivated on the allantoic membrane of the chick embryo is much richer in viruses and may, therefore, be used in high dilutions. It is likewise more economic and can be prepared in large amounts, due to the simplicity of the method.

554.- I. SUHACI, R. URSACHE. Comparative immunizing value of various sheep pox vaccines. St. cerc., inframicrobiol., microbiol., parazitol., 1955, 6, 3-4, 443.

A comparative study was carried out on the immunizing value of the sensitized sheep pox virus and 3 types of vaccine.

a) 10 % integument triturate, 10 % skin triturate characteristically modified and adsorbed on $Al(OH)_3$ 2% formolate.

b) 10 % connective tissue triturate obtained after infection with the adsorbed and formulated (1%) variola virus.

c) 10 % adsorbed and formulated (0.5%) Borel pustula triturate.

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The sensitized virus is superior immunologically to other vaccines.

The virus prepared from the integuments confers a higher degree of immunity than the other adsorbed pox vaccines, even in 3 ccm doses (as compared to 5 ccm doses).

The vaccine adsorbed on $Al(OH)_3$ has the advantage of being preservable for a longer period of time (18 months) than the sensitized virus (45 days). In order to prepare the adsorbed virus, a six to sevenfold greater number of sheep are necessary than for the sensitized vaccine; but if account is kept of the fact that a single animal can give 150-200 doses, then the cost of the vaccine is not too great.

One of the advantages of the adsorbed vaccine is that it can be prepared with indigenous strains isolated during an epizootic, whereas the sensitized virus necessitates special strains.

555.- C.SURDAN, L.PASCU, H.WEGENER, C.CURE. Investigations on the $Al(OH)_3$ adsorbed anti fowl pox vaccine. St. cerc., inframicrobiol., microbiol., parazitol., 1955, 6, 1-2, 131.

The new strain of the fowl pox virus, adsorbed on $Al(OH)_3$ and not inactivated by physical or chemical procedures, can be transformed into an active vaccine virus.

The best quantitative ratio between the virulent suspension and $Al(OH)_3$ is 2:1, the best adsorption pH, 7.4-7.6; a Jensen buffer phosphate solution (pH 7.6) was used for suspension of the virulent membrane powder.

Experiments were carried out on three patterns of anti-fowl pox vaccine, of which the second was demonstrated to be the best. Pattern I, with a 1:1 ratio between the virulent suspension and $Al(OH)_3$ produced strong local reactions, but conferred solid immunity.

The vaccine prepared according to pattern III, with a ratio of 3:1, produces a slight reaction at the site of inoculation but does not immunize, neither does it when

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formulated 0.25 %.

Investigations showed that 21 days after vaccination, the hens presented solid immunity, resisting to high challenge doses (intradermal inoculation of 0.1 ml 1/50 virulent material and parallel experimental infection of 40-60 plumose follicles). In all the cases, the controls exhibited strong local reactions of the epitheliomatous type and variollic generalizations.

The birds vaccinated with the adsorbed vaccine are not virus eliminators contagious for non-immunized receptive birds. Contact controls (21 days) did not contract the disease; exposed to the experimental disease they contracted it.

The immunogenic value of the anti fowl pox non formulated adsorbed vaccine can be established only after its application in various conditions to birds of various ages.

556.- V.TOMESCU, I.SUHACI, R.URSACHE. Immunologic relations between various strains of the fowl-pox virus. St. cerc., inframicrobiol., microbiol. parazitol., 1955, 6, 1-2, 111.

The experiments on crossed infection and immunity showed the following relations between the three fowl-pox virus strains (of the hen, pidgeon and turkey).

Although the hen fowl pox virus is not pathogenic for pidgeons it confers complete immunity to hens and to turkeys against the pidgeon fowl pox virus.

Both the pidgeon and turkey fowl pox virus obtained from scabs (not modified by cultivation on embryonated eggs) does not confer full immunity to hens against the hen fowl-pox virus.

The turkey fowl-pox confers inconstant immunity to the pidgeon virus and conversely, hence, the pidgeon strain and the turkey strain isolated in our country closely resemble each other, and the second may be assumed to be a pidgeon strain adapted to turkeys. However, there is no

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identity between the antigenic factors of the pidgeon and turkey strains, as shown by crossed immunity and infection tests carried out on hens and turkeys.

From the above it may be deduced that the hen strain has a more complex antigenic constitution than the pidgeon strain, that this in turn is more complicated than the turkey strain and that, besides the common antigens, each type of fowl-pox virus possesses one or several antigens of its own, fact which accounts for some of the discordant results obtained in the crossed immunity tests.

557.- I.SUHACI, R.URSACHE, V.TOMESCU. Investigations on the possibility of anti-fowl pox vaccination of pigeons with the turkey-fowl pox virus strain. St. cerc., inframicrobiol., microbiol., parazitol., 1956, 2, 3-4, 403.

A description is given of the results obtained in anti-fowl pox vaccination of pigeons with the fowl pox virus isolated from diseased turkey s in breeding farms where the disease had not affected the hens.

Immunizing experiments were carried out in the laboratory and on more than 1,000 pigeons.

The vaccine virus used was prepared from an allantoic-amniotic triturate, on which the turkey fowl pox virus had been cultivated, virus which had been carried through 4-6 serial passages in vivo on the skin of pigeons and one passage on the chorio-allantoic membrane. Vaccination was performed in infected breeding farms, with a vaccine stored for various periods of time.

Positive post-vaccinal follicular reactions were obtained in 77.5 and 97.3% of the cases, depending upon the age and the way in which the vaccine was prepared.

No new cases appeared 7 days after vaccination, until 8 months later, when new cases cropped up among the young non-vaccinated birds.

An immunologic identity does not exist between the

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turkey and hen strains of the fowl pox viruses as it does between turkey and pigeon fowl pox viruses, where strong immunologic relations exist conferring crossed immunity, which is greater when the turkey strain has been previously adapted on the skin of the pigeon.

558.- I.SUHACI, R.URSACHE. Researches on immunisation in fowl pox to the memory of Prof. Paul Riegler. " Homages à la mémoire du prof. Paul Riegler " Buc. 117.

In order to remove the defects of the vaccine prepared from fowl pox crusts collected from pigeons experimentally infected with the pigeon strain of fowl pox virus, investigations were carried out on the immunobiologic correlations between the pigeon, hen and turkey strains of the fowl pox viruses.

The results obtained in these experiments and the use of these cultures following adaptation to the chorio-allantoic membrane, led to the following conclusions:

- the vaccine, prepared with the pigeon strain (adapted to the embryonated egg) and inoculated to thousands of birds of various ages and in different epizootologic conditions, is incomparably superior to the crust vaccine.

- by lyophilisation of the fowl pox virus, the validity of the vaccine is prolonged from 45 days to 8 months, thus becoming more stable in environmental conditions during the hot weather.

- the turkey fowl pox virus is readily adaptable to the skin of the pigeon, particularly after serial passages on the chorio-allantoic membrane of the embryonated egg. Immunity conferred to pigeons by the virus adapted in this way appears 7-8 days after vaccination and lasts about 8 months.

- the hen fowl pox virus, after serial passages on the chorio-allantoic membrane, loses its capacity to produce generalized fowl pox and is outstandingly more immunogenic than the hen strains.

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559.- I.SUHACI, R.URSACHE, V.TOMESCU. Use of the homologous virus in anti=fowl pox vaccination of hens. St. cerc., inframicrobiol., 1959, 10, 3, 305.

In view of the fact that immunity conferred to hens by vaccination with the pigeon fowl pox virus is readily overcome in the case of an epizootic produced by a stronger virus, investigations were carried out on the possibility of vaccinating hens with the homologous virus. To this end, a virus strain was isolated in the course of sporadic benign cases and adapted to the chorio-allantoic membrane. After a variable number of passages, its pathogenic potential was determined and at the 34th passage the LD_{50} for chickens was 10^{-5} , but induced only an epitheliomatous lesion at the site of the inoculation, without a generalized fowl pox process.

Experimental vaccination showed that the vaccinated chickens cannot spread the disease to the non-vaccinated chickens. The innocuity of the strain was also determined by massive inoculation (80 vaccinating doses) of young chickens, sensitive to fowl pox.

It was likewise found that administration of the vaccine (membrane triturate in a 1/400 suspension) by smearing on the plucked skin is the most effective route of administration, followed by the subcutaneous and then by the transcutaneous route. By lyophilization, the virus maintains its immunogenic property more than 10 months.

Laboratory (about 300 birds) and field experiments (30,000 chickens) demonstrated that the innocuity of the vaccine is perfect and that, apart from its obvious prophylactic character, it also possesses a curative action, the fowl pox or diphtheroid processes regressing in a great number of the sick birds.

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560.- C.SURDAN, C.CURE, M.WEGENER, E.DUMITRIU. Identification of the infectious encephalomyelitis virus of foxes in the Rumanian People's Republic. Report read at the Conference of the Czechoslovakian Virologists Smolenice 14-17 October 1955.

Following epizootologic and experimental investigations, it was possible to isolate and identify a focus of infectious encephalomyelitis in silver foxes in the R.P.R.

The disease had a stationary enzootic character, causing great losses among the fox cubs (1-4 months) and slighter losses among the adult animals.

The clinical symptoms and anatomo-pathologic modifications were characteristic of infectious encephalomyelitis of foxes.

It was possible to transmit the disease experimentally to foxes by intramuscular inoculation of a brain suspension from dead animals.

Dogs were infected with fox encephalomyelitis virus by intrarachidian inoculation of a brain suspension filtered through the Seitz EK₆ filter. The virus was adapted to dogs by serial passages on this species.

The fox encephalomyelitis virus produces in dogs clinical signs and anatomo-pathologic modifications similar to those of canine infectious hepatitis described by Rubarth.

561.- C.SURDAN, C.CURE, M.WEGENER, E.DUMITRIU. Epizootologic study of infectious encephalomyelitis in silver foxes. St. ceșc. inframicrobiel., microbiel., parazitol., 1956, 7, 1-2, 101.

The investigations carried out revealed for the first time the existence of encephalomyelitis in foxes in our country.

Encephalomyelitis in foxes is an enzootic disease that causes great losses among the 1 to 3 months cubs and to a lesser extent among the adult animals.

The persistence of the disease is conditioned by the presence of virus carriers and eliminators, represented by the foxes that recover from the disease.

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The clinical symptoms and anatomopathologic modifications found in the dead foxes were characteristic of infectious encephalomyelitis.

By subarachnoid inoculations it was possible to transmit the virus to dogs. After 6 passages on dogs, the encephalomyelitis virus of foxes was perfectly adapted to the central nervous system of dogs, inducing the lethal disease in 100 per cent of the cases.

The encephalomyelitis virus of foxes inoculated to dogs produces clinical signs and anatomopathologic modifications similar to those of canine infectious hepatitis described by Rubarth.

62.- C.SURDAN, E.DUMITRIU, C.CURE, M.WEGENER. Study on the anatomic and histopathologic modifications produced by the encephalomyelitis virus of naturally or experimentally infected foxes and dogs. St.cere. inframicrobiol., microbiol., parazitol., 1957,8,1,71.

An anatomic and histologic study was carried out on 18 killed or sacrificed silver foxes and 35 dogs which died following natural or experimental infection with the encephalomyelitis virus.

In foxes the anatomic - histologic examination showed inflammatory and degenerative processes of the reticulo - endothelial system, hemorrhages and cellular infiltrations in various organs and tissues, cytonuclear degenerative lesions in the liver, kidneys and suprarenals. The nervous system shows processes of leptomeningitis, diffuse cortical encephalitis, chromatolysis and neuronal degenerescence.

In dogs, the anatomic-pathologic study showed general anemia, subicterus, exudate in the cavities, inflammatory and degenerative lesions of the reticulo - endothelial system, hemorrhages and cellular infiltrations, that condition a whole range of trophic - degenerative disturbances in all the

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organs. In the liver, pathognomonic modifications are represented by nodular degenerescence and necrosis, grave cyto-nuclear disturbances with presence of inclusions in the nuclei of the hepatic cells and more seldom in those of the endothelial cells. In the nervous system, hemorrhagic and infiltrative nodular or diffuse lesions, perivascularitis, cyto-nuclear neuronal degenerescence and chromatolysis can be observed. Processes of neuronophagia are seldom encountered.

The encephalomyelitis virus isolated from silver foxes and inoculated to dogs, produced the same anatomo - histopathologic modifications as the virus of canine contagious hepatitis (Rubarth), a fact which lends support to the etiologic unity of the two diseases.

563.- G.SURDAN, C.CURE, M.WEGENER, E.DUMITRIU. Study on immunization in inframicrobial infectious encephalomyelitis of foxes. St. cerc. inframicrobiol., microbiol., parazitol., 1957, 8, 3, 323.

According to a personal method, an $Al(OH)_3$ adsorbed and 0.25 % formulated anti - encephalomyelitic vaccine was prepared for the active immunization of silver foxes.

The liver, spleen and lymph glands collected from puppies experimentally infected with the encephalomyelitis virus of foxes were used as antigenic material. The vaccine was prepared as follows: a suspension of 4 gm organs in a 33.62 % Jensen buffered solution ; 66.39 % $Al(OH)_3$ with a 5.9 pH after sterilization; 0.25 % formol 40 volumes; the

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final pH of the vaccine ranged between 6.6 - 6.9.

This vaccine inoculated by subcutaneous route to puppies in 2 and 3 ml doses confers solid immunity in 100 % of the cases against the challenge infection with 1 ml encephalomyelitis virus injected by intraperitoneal route 15 - 21 days after vaccination.

The supernatant obtained after centrifugation of the adsorbate is not virulent or immunizing for puppies, which shows that it does not contain the active or modified virus, the immunizing complex being closely linked to the aluminium hydroxide.

For active immunization of silver foxes, 2-3 ml doses were used for the fox cubs and 5 ml for the adult animals. A slight general reaction appears after vaccination (subfebrile state, loss of appetite, torpor), which lasts 1-3 days. At the site of the injection an inflammatory process appears which improves after 7-8 days leaving a hard nodule that disappears in 3-4 months.

Application of the vaccine in a strongly infected breeding farm resulted in eradication of the disease within a year.

The vaccine can be successfully applied to immunize dogs against contagious hepatitis.

An immun serum was also prepared against encephalomyelitis of foxes by hyperimmunization of dogs; its preventive value was demonstrated to be very high.

Det.- C.SURDAN, C.CURE, E.DUMITRIU-CAROL. Investigations on the canine contagious hepatitis virus. St. cerc., infamicrobiol., microbiol., parazitol., 1957, 8, 4, 527.

Experimental researches showed that canine contagious hepatitis virus strains and infectious encephalomyelitis strains of foxes, isolated in the R.P.R. are not pathogenic for kittens, small pigs, foals, lambs, baby guinea pigs, baby rats, chickens, young mice and golden hamsters.

Experimental infection of the 9 species was done by

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various routes of inoculation (subarachnoid, intracerebral and intraperitoneal), in adequate doses for each species and route of inoculation. Infectivity and specificity of the virulent material was tested by inoculation into two groups of control puppies, which contracted and died of the disease.

The virulence of infectious encephalomyelitis of foxes and canine contagious hepatitis viruses is maintained by freezing at -15°C - 165 days. A 10 % suspension of the virulent brain, preserved by lyophilization, is still active after 14 months, but the virus is slightly attenuated.

Epizootologic, clinical and experimental investigations showed that canine contagious hepatitis can be accidentally transmitted to dogs by the glycerophenolated antirabies vaccine, if the antigenic mass used for its preparation is produced on dogs, that have not been previously controlled.

A 20 % suspension of virulent material, collected from dogs which died of contagious hepatitis, treated with 5/1,000 phenol and stored at $+4^{\circ}\text{C}$ up to 23 days, maintains its virulence, inducing the lethal disease in puppies inoculated by intraperitoneal route.

565.- C. SURDAN, C. CURE, E. DUMITRIU, I. DUMITRESCU. Study on canine contagious hepatitis (Rubarth) in the R.P.R.
St. cerc., inframicrobiol., 1959, 10, 1, 39.

The first cases of canine contagious hepatitis in the R.P.R. are reported. Two enzootics of this disease were studied.

The highest morbidity rate was reported among puppies. In certain animals the disease takes on a supra-acute form with predominant hemorrhagic and encephalitic syndrome. In most cases the evolution of the disease is acute with predominance of the hemorrhagic and hepato-gastro-enteric syndromes and only seldom is the encephalomyelitic syndrome encountered. The mortality rate was 20 %.

Diagnosis was confirmed by hematologic, biochemical, anatomo- and histopathologic examination and by experimental

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transmission.

Four identical strains of the Rubarth virus were isolated. They were also identical to the encephalo-myelitis virus isolated by the same authors from silver foxes.

566.- C.SURDAN, E.DUMITRIU, C.CURE . Research work on the cultivation of canine contagious hepatitis virus on chick embryos. St. cerc. inframicrobiol., 1959, 10, 2, 143.

Starting from a strain of canine contagious hepatitis virus (Rubarth) isolated in our country, it was possible to adapt and cultivate the virus on chick embryos, carrying it through 15 passages. The virus cultivated on the embryo exhibited 3 phases: a phase of adaptation (passages 1 and 2), a phase of exacerbation (passages 3-10) and a phase of attenuation (passages 11-15) of its virulence.

Pathogenicity of the virus cultures on eggs was tested at each passage by inoculation to dogs.

Cultivated on the embryonated egg the virus produces oedema and whitish plaques of various sizes on the chorio-allantoic membrane, hemorrhages and cutaneous oedema accompanied by hepatic degenerescence with necrotic foci at the level of the embryo.

Histologic modifications of the chorio-allantoic membrane are represented by zonal proliferations of the ectoderm with cyto-nuclear degenerescence, cellular infiltrations and oedema in the mesoderm.

The embryo exhibits hepatic degenerescence with severe cytonuclear alterations that develop up to cellular necrosis.

567.- C.SURDAN, C.CURE, E.DUMITRIU, M.WEGENER. Investigations concerning the relationship of silver fox encephalitis to infectious canine hepatitis of Rubarth. Acta Virologica, 1959, 3, 2, 115.

Canine contagious hepatitis of Rubarth is described for the first time in the R.P.R. together with a comparative epizootologic, anatomic and histopathologic study of fox encephalitis and contagious canine hepatitis.

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The encephalitis virus isolated from foxes was pathogenic for puppies, producing a disease identical to canine contagious hepatitis. Pathogenicity of the virus for adult foxes was not modified by passages on dogs.

The epizootologic and experimental studies carried out showed that canine contagious hepatitis can be transmitted by the glyco-phenolated antirabies vaccine, if for the preparation of this vaccine the brain of dogs infected with canine contagious hepatitis was used.

The virus of canine contagious hepatitis was cultivated on embryonated eggs, producing infiltration and inflammation of the membrane and hemorrhagies, degeneration and necrosis of the embryo.

Identity of the two viruses was demonstrated by the cross-immunity test, making use of immune sera and monovalent vaccine.

A vaccine adsorbed on $Al(OH)_3$ and formulated, ~~as was~~ prepared with the strains of the two viruses isolated from dogs and foxes. The immunogenic value of the vaccine was tested on 500 foxes and 300 dogs. An immune serum extremely useful in prophylaxis, was likewise prepared.

Swine plague

568.- V. TOMESCU, I. GHEORGHIU, T. ALBU, S. MIHAITA, L. PASCU, M. POPA. The role of lapinized swine plague virus eliminators in contact immunity. St. cerc. inframicrobiol., 1960, 11, 1, 141; Rev. Sci. Med. 1959, 4, 131.

The pigs sensitive to swine plague, vaccinated with the lapinized antiplague virus-vaccine, become virus carriers and eliminators.

The control pigs put together with the lapinized virus vaccinated pigs for 14 to 18 days, may become immunized against swine plague, resisting a severe parenteral infection with the pathogenous virus (about 1 million subcutaneous and LD) in a mean proportion of 29.71 per cent (27.21 per cent in summer and warm season and 44.5 per cent in winter and cold season).

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The pigs vaccinated by subcutaneous inoculation with plague antiserum (1 ml/kg body weight) and lapinized virus vaccine (2 ml lyophilized blood diluted 1:100) are not virus eliminators and hence, the contact controls remain sensitive to infection with the pathogenic virus, similar to the control pigs put together with the pigs vaccinated with inactivated antiplague vaccine.

569.- S.MIHAITA, M.POPA. Investigations on the interference phenomenon between the lapinized and the pathogenic swine plague viruses. St. cerc. inframicrobiol., 1960, 11, 3, 391.

The lapinized swine plague virus, inoculated in vaccinal doses to pigs defends them against subcutaneous infection with the classical virus, after 72 hours following application of the lapinized virus.

The phenomenon by which the lapinized virus confers early protection against swine plague is due within the first days to interference between this virus and the pathogenic virus of swine plague. It was possible to detect this phenomenon owing to the difference in time - 2 to 4 days - of the action in the organism of the lapinized and pathogenic virus.

The results obtained showed that the lapinized swine plague virus multiplies and disseminates in the organism of the pigs within 48 to 72 hours after inoculation, attaining a maximum proportion of viral elementary bodies in the circulating blood in 6 to 7 days, after which it gradually regresses in quantity, in favour of the development of antibodies.

The rhythm of multiplication and dissemination throughout the organism of the classical swine plague virus is more accelerated by 48 to 72 hours than that of the lapinized virus.

Vaccination of healthy pigs with lapinized virus, threatened by infection or subjected to contamination concomitant to vaccination, may protect against contagion more than 75 per cent of the animals.

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570.- S.MIHAIITA, T.ALBU, A.BERCAN. Cases of swine plague displaying limited contagiousness due to vaccinating strains of plague virus adapted to the rabbit. St. cerc., inframicrobiol., 1961, 12, suppl., 463.

When used for immunization without the association of swine plague serum, the swine plague virus adapted to rabbits was found to be apt to induce in swine clinical diseases and anatomopathological changes which are comparable to those caused by the classical virus.

Swine plague virus adapted to rabbits is eliminated in an active state by the immunized swine, as demonstrated by the immunization of 30-40 per cent of the control animals kept in contact with the vaccinated ones and by the occurrence of plague in a few of these controls.

Swine plague could not be experimentally induced by means of virulent material collected from the animals suffering from plague caused by this virus.

When used in association with swine plague serum or in previous immunized swine, this virus is not eliminated in an active state.

571.- I.GHEORGHIU, T.ALBU, C.SURDAN, N.CARR, M.POPA. Immunogenic potency of adsorbed swine plague vaccine associated with Salmonellae. St. cerc. inframicrobiol., 1961, 12, suppl., 455.

Adsorbed formolized swine plague vaccine prepared by means of virulent material collected from piglings which had been infected with the virus and in which plague had been complicated by association with spontaneous salmonellosis, proved to possess higher immunogenic potency against swine plague than swine plague antigen from piglings in which this virosis had developed without bacterial complications.

The same vaccine was prepared by means of virulent material from piglings in which plague and salmonella infections had been experimentally induced, or by means of plague antigen from piglings with uncomplicated plague, to which experimentally in vivo cultured salmonellae were added. The immunoge-

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nic potency of these vaccines closely approached that of the above-mentioned ones.

The immunogenic potency of vaccine prepared by means of virulent material from piglings with uncomplicated experimental plague, as well as the potency of vaccine to which in vitro cultured salmonellae were added, were lower than that of vaccines in which the mixed antigen consisted of plague virus and in vivo cultured salmonellae.

Enzootic pneumonia

572.- C.SURDAN, G.SORODOC, Investigations on swine enzootic pneumonia virus- St. cerc. inframicrobiol., 1960, 11, 1, 149; Acta Virol. Ung. 1960, 7, 2, 187.

By cultivation in the yolk sac of 7 to 8 days old chick embryos, the authors isolated and adapted to eggs two swine enzootic pneumonia virus strains, carrying them through 12 and 13 passages.

In the smears prepared from the yolk sac, stained by the Hertzberg-Gutstein method, coccoid elementary bodies, measuring approximately 200-250 m μ , were observed.

With the ovoculture virus at the 4th and 11th passage for both strains, the experimental infection was produced by intranasal instillation to 4-6 weeks old pigs, bred under uncontaminated conditions.

Pulmonary histopathologic alterations are represented by bronchopneumonia lesions that present extensive lymphoid hyperplasia and a tendency towards purulent bronchopneumonia.

With the virulent material from experimentally infected pigs, the virus was again isolated by cultivation in the yolk sac of embryonated eggs.

The virulent material from sick pigs and the ovoculture virus, are not pathogenic for young white mice, guinea pigs, hamsters and rabbits.

Neither the native virus, nor the ovoculture virus are hemagglutinating. The sera of pigs that have suffered from the disease do not contain neutralizing or complement fixing antibodies.

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573.- C.SURDAN, G.SORODOC. Experimental investigations on active immunization against swine viral enzootic pneumonia. St. cerc. inframicrobiol., 1961, 12, 1, 53; Rev.Sci.Med. 1959, 4, 123.

Two kinds of vaccine against swine viral pneumonia, prepared from the ovoculture virus, were tested (chick embryo and yolk sac membranes inactivated by 0.05 and 0.1 per cent formol and by maintenance 24 hours at 36°C). In order to establish their immunogenic value, artificially raised pigs, bred under non-contaminated conditions, were employed.

The animals were vaccinated by respiratory route, in 2 aerosol exposures at 7 days interval, with a dose of about 5 ml vaccine diluted 1/10 and 1/5.

Anatomopathologic investigations showed that the vaccinated pigs, sacrificed 14 days after the control infection, presented only slight pulmonary alterations, whereas the control pigs presented macro - and microscopic pulmonary lesions, characteristic of infectious viral bronchopneumonia.

574.- C.SURDAN, V.CARAMAN, G.SORODOC, A.BERCAN. An anatomical and clinical study of enzootic viral pneumonia of swine. St. cerc., inframicrobiol., 1961, 12, suppl., 335.

The incidence rate of enzootic virus bronchopneumonia was investigated in the swine and at the " Pasteur " Serum and Vaccine Institute in Bucharest for the preparation of biological products against swine plague. Clinical signs of enzootic bronchopneumonia were recorded in about 60 per cent of the swine aged from 3 to 6 months and in 15 per cent of the adults. In most of the cases the disease followed a chronic course, the main symptoms being coughing and dyspnoea. Acute catarrhal forms accounted for about 15 per cent of the cases. Adult swine exclusively displayed chronic forms. The pneumonic lesions are, as a rule, situated in the apical and cardiac lobes. Histologically, there is lymphocytic infiltrative bronchopneumonitis.

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Investigations in the slaughter-house, performed in 23,858 swine aged from 3 to 6 months and in 2,996 adult swine, showed lesions of enzootic pneumonia to be present in 69 per cent and in 21.1 per cent of the cases respectively.

From 34 lung specimens displaying lesions, the virus of enzootic pneumonia was isolated in 21 cases (61.7 per cent). The morphological and biological characters of the virus isolated are similar to those of the pararickettsiae. As a rule, the bacterial flora isolated from the lungs of swine exhibiting the disease is not pathogenic for white mice.

575.- G.SORODOC, C.SURDAN, D.SARATEANU, V.SUTEU. Investigations concerning the identification of the virus causing enzootic pneumonia of swine. St. cerc. inframicrobiol., 1961, 12, suppl., 355; Rev.Sci.Med.1961, 6, 1-2, 113.

Morphological, biological and serological investigations have resulted in the identification of the virus causing enzootic hog pneumonia. Cultivation in embryos, staining by Macchiavello's method, visualization in the optical microscope as well as the size and polymorphism of the elementary bodies are characters shared by the virus of enzootic pneumonia of swine and the virus of ornithosis.

The titres of infectiousness in white mice ($10^{-4.49}$) and in embryos ($10^{-4.7}$) are similar to those of the Pararickettsia strains isolated in the Rumanian People's Republic. The homologous immune serum exerts the same neutralizing

action as ornithosis serum on the virus of enzootic hog pneumonia and the same agglutinating action on stained ornithosis antigen. In direct and crossed complement fixation tests, both antigens display a similar behaviour versus homologous and heterologous immune sera.

It results from these investigations that the virus of enzootic hog pneumonia belongs to the Pararickettsia group and is identical with the virus of ornithosis.

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Foot and mouth disease..

576.- V.TOMESCU, M.POPA, V.DOHOTARU. Observations on virus strains isolated during the present foot and mouth disease epizootic in our country. St. cerc., inframicrobiol., 1961, 11, 3, 381.

A study was carried out on the aphthous O₂ virus strain, isolated during the epizootic in Rumania with a view to preparing a vaccine.

Adaptation of the virus strain to the tongue epithelium of bovines, in order to produce the virulent material for the preparation of the vaccine (in the mean 25 gm material per head of cattle - fixing the incubation period at 24 hours), was obtained only after 3 passages, when the isolated virus was directly inoculated and after 6 passages, when the virus was first maintained by serial passages in suckling mice.

The intensity of the reactions (represented by the amount of virulent lingual epithelium obtained) is stronger in young female animals, of pure breed, especially Simmenthals.

Virulence of the strain for bovines, titred by the Henderson method, was $10^{-6.7}$ at the 6th passage and subsequently exceeded 10^{-7} .

The immunizing potential of the strain was proved by experimental preparation of a vaccine with a high immunogenic value.

577.- V.TOMESCU, L.PASCU, C.SURDAN, M.POPA, V.DOHOTARU, A.ELEFTERESCU, I.GHEORGHIU, C.EUSTAFIEVICI, G.MOLDOVAN, G.CONSTANTINESCU, F.DAN, R.IFTIMOVICI. A study of immunity following vaccination against foot-and-mouth disease. St. cerc., inframicrobiol., 1961, 12, suppl., 385.

By means of the O₂ strains which was isolated during the 1959 epizootic in Rumania, the authors have prepared a monovalent vaccine against foot-and-mouth disease according to the classical method of Vallée-Schmidt-Waldmann. The vac-

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cine was prepared from natural virus and contained 1.2 per cent virulent material 0.5% formol and 50 per cent aluminium hydroxide; pH = 7.8.

By testing various doses of this vaccine in 2-years-old cattle of 250-300 kg body weight, the authors found 0.12g viral mass per dosis to be sufficient for conferring solid immunity.

Immunity following vaccination gradually sets in from the first days after inoculation, but will not reach a sufficient degree for some of the animals to resist severe experimental infection before the 8th day. It gradually increases up to the 21st day when, as a rule, all the vaccinated animals resist experimental infection.

Immunity persists at an almost constant level for about three months and subsequently decreases progressively, being, however, still rather marked even at the end of 8 months when only 2 out of 5 animals will display generalized foot-and-mouth disease upon challenge.

The experiments of the authors have moreover demonstrated the importance of using strains isolated from a local epizootic for the preparation of a vaccine conferring strong immunity.

578.- C.SURDAN, V.TOMESCU, V.DOHCOTARU, M.POPA, R.IFTIMOVICI, G.MOLDOVANU, O.URSACHE, L.LUPASCU. A study of the presence and persistence of foot-and-mouth disease virus in the body of experimentally infected cattle. St.cerc., inframicrobiol., 1961, 12, suppl., 399.

In order to demonstrate the presence of foot-and-mouth disease virus in the body of cattle sacrificed 24 hours following experimental infection, intradermal inoculations into the tongue of cattle were performed, according to Henderson's method.

Blood collected from the jugular vein maintains its virulence for over 48 hours, whereas hard blood kept in situ becomes non-virulent after 48 hours. Blood clots in the

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muscles become non-virulent after 48 hours when maintained in situ during this period.

The cerebrospinal fluid, pleural fluid, pericardiac fluid, the aqueous humor, urine and bile are virulent. Urine and bile kept in situ maintain their virulence after 48 hours.

The central nervous system, the salivary glands and the adrenals preserved in situ maintain their virulence for more than 48 hours.

The lymphatic system, is highly virulent. Extra-muscular lymphatic nodes remain virulent for more than 48 hours, whereas those included in the muscles become non-virulent at the end of 48 hours. The lung maintains its virulence for more than 48 hours, whereas the liver, the spleen, the pancreas and the kidney are no longer virulent after this time interval. The contents of the whole digestive tract are virulent, the highest virus concentration being reached in the rumen.

In the skeletal muscles, the virus is present immediately after sacrifice but will be inactivated within 48 hours at the utmost, if the meat is stored at 10-12°C. It takes the same time interval for the virus to be inactivated in the myocardium. Suet maintains its virulence for over 48 hours.

The pH of meat stored at 10-12°C decreases from 7.1 to 6.2 within two hours following sacrifice. After 15 hours, it will sink to 5.3 in order to rise to 6 between the 15th and the 33th hours and to persist at this level up to the 75th hour when it begins to rise towards neutrality. Subsequent increases of the pH above 6.5 correspond to the onset of alteration processes in the flesh.

There is a close relation between pH decrease and the potency of foot-and-mouth disease virus inactivation in the body of sacrificed cattle.

The possible persistence of infectious virus for more than 48 hours in meat matured at 10-12°C is discussed.

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579.- C.SURDAN, S.DUMITRESCU, N.I.IONESCU, M.POPA, E.PACU-RARU. Electron microscope investigations on the changes occurring in the myofibrils of suckling mice infected with the virus of foot-and-mouth disease. St. cerc., inframicrobiol., 1961, 12, suppl., 429 ; Rev.Sci.Med.1961, 6, 1-2, 123.

Upon examination by means of the electron microscope of the changes occurring in the myofibrils of suckling mice experimentally infected with the O₂ virus of foot-and-mouth disease, details become apparent which are not demonstrable with the common microscope.

Progressive processes of alteration of the myofibrils are present, consisting in tumefaction of the " and Z discs, hyalinization and dissociation of the actomyosin filaments, disappearance of the N strial and herniation of the Z discs. In more advanced stages, the periodical structure disappears and subsequently the myofibril undergoes total disaggregation with release of the actomyosin masses and Z discs and considerable accumulation of collagen fibres.

The changes induced by foot-and-mouth disease virus at the level of the myofibrils in 7-14 day-old suckling mice are very similar to those caused by Coxsackie A virus.

580.- AR.POPESCU, I.PASCU, V.TICAN. The virus of foot-and-mouth disease in cell cultures. II. The cultivation and titration of the autochthonous O₂ strain in trypsinized swine kidney cortex cells. St. cerc. inframicrobiol., 1961, 12, suppl., 437. Monolayer cell cultures and subcultures (secondary cultures) were prepared by trypsinizing the renal cortex of swine embryos. These cultures were inoculated with the O₂ foot and mouth disease virus strain isolated in the R.P.R. in 1959. Ten passages have so far been carried out.

The cytopathogenic action of this strain was expressed by: rounding of the cells, their grouping in the shape of groups, the appearance of globular formations within the nucleus, the formation of cell-free areas in the

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monolayer and complete destruction of the latter within 24-36 hours.

These phenomena set in more rapidly and displayed a greater intensity than those recorded in calf kidney cell monolayers infected with the same strain. Upon the 10th passage, the infectiousness of the cultured virus was titrated in cell cultures and by intraperitoneal inoculation in suckling mice. The results were $IDTC_{50}=10^{-5.4}$ and $LD_{50}=10^{-4.8}$.

Cell culture passages of the strain are continued with a view to adapting it to Frenkel's culture method.

581.- AR.POPESCU, V.TICAN, L.POPESCU. Investigations on the correlations between serum protein concentrations and specific antibody levels in foot-and-mouth disease hyperimmune serum. St. cerc. inframicrobiol., 1961, 12, suppl., 445-448.

The electrophoretic investigation and humoral antibody test in the sera of a group of cattle undergoing foot-and-mouth disease hyperimmunization resulted in the following findings:

A slight decrease of gravimetric figures concerning albumins was probably due to repeated bleeding or to nutritional deficiency, the experiment having been carried out during winter when no green fodder was available.

The sole change in the absolute, as well as in the relative serum globulin figures consisted in an increase of alpha-globulins, whereas beta- and gamma-globulins displayed but small variations without immunological significance.

The titers of virus-neutralizing antibodies increased almost threefold, while the complement fixing antibody titers remained low throughout the $3\frac{1}{2}$ months of hyperimmunization.

No correlation was found to exist between the level of neutralizing antibodies and that of complement fixing antibodies or between the titres of these antibodies and the electrophoretic pattern of the blood sera.

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Aujeszky disease.

582.- I.SUHACI, R.URSACHE, V.TOMESCU. Investigations on the alterations suffered by Aujeszky virus following numerous passages in the embryonated chick egg. St.cerc., inframicrobiol., 1960, 11, 2, 263.

Determination of the pathogenic titer of Aujeszky virus cultivated in the chorio-allantoic membrane showed a progressive increase from $LD_{50} = 10^{-4.32}$ (initial titer) to $10^{-7.50}$ at the 52nd passage and then a gradual decrease to 10^{-5} at the 131st passage with a steady tendency to fall.

The alterations produced by the virus in the chorio-allantoic membrane are characteristic and manifested by isolated or confluent focal lesions, their intensity depending upon the dilution inoculated and the moment at which the eggs are opened. Similarly, oedema may be observed and a tendency towards necrosis around the inoculation site.

Anatomo-pathologic alterations of the embryo are represented by lesions of the hemorrhagic type, disseminated at the beginning at first over the whole body and then localized in the brain. Softening of the brain is observed, together with a hemorrhagic aspect. The body of the embryo is pale and insufficiently developed.

At the microscope, congestive lesions are observed throughout the brain, congestion of the meninges and slight perivascular infiltration. In the nuclei of the neurons in the affected regions, characteristic oxyphil formations are to be found.

In the chorio-allantoic membrane, proliferation of the ectodermal layer may be observed, as well as vacuolar degeneration of its cells and fusion that progresses up to cellular necrosis. The same proliferative and hemorrhagic process, with the presence of polyblasts may be observed in the mesoderm.

Comparatively, distribution of the virus in the chorioallantoic membrane and the embryo is essentially equal. Titered in the rabbit, at the 52nd passage, the pathogenicity of the membrane was $10^{-7.49}$ LD_{50} and of the embryo $10^{-7.50}$.

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583.- AR.POPESCU, V.TICAN, P.DINCULESCU, L.POPESCU. The Aujeszky virus in cell cultures. I.-Cultivation of the Aujeszky virus in trypsinized swine kidney cortex. St. cerc., inframicrobiol., 1961, 12, suppl., 479.

The virus of Aujeszky's disease was cultivated in secondary monolayer cultures of swine renal cortex cells obtained by the trypsinization method according to Dulbecco and Voigt.

The virus exerted an early and intense cytopathogenic action. The cells could be seen to become round-shaped, giant pseudocells appeared, margination of the chromatin occurred, inclusion bodies of the Hurst-Nicolau type formed, and the cell layer was destroyed within 18 hours following infection (at the utmost). The specificity of the cytopathogenic action was checked by serum neutralization.

The infectiousness of the virus upon the 12th passage was assessed in cell cultures and by intracranial inoculation in mice. The results obtained by computation according to the method of Reed and Muench were $IDTC_{50} = 10^{-5.8}$ and $LD_{50} = 10^{-4.2}$.

Culture passages of the virus will be continued and attempts will be made to use the virulent fluid as an antigen for the production on an industrial scale of hyperimmune serum in equidae.

Fowl pox

584.- L.PASCU, C.SURDAN, A.ELEFTERESCU, A.ENACHE. The behaviour of vaccine adsorbed onto $Al(OH)_3$ in the prophylaxis of fowl pox. St. cerc. inframicrobiol., 1961, 12, suppl., 471.

The behaviour of fowl pox vaccine adsorbed on the $Al(OH)_3$ according to a personal method of the authors was tested in various epizootological circumstances. Immunization of healthy fowls in epizootic foci stops the spreading of the epizootic within 4-10 days and causes its disappearance after 10-35 days.

Prophylactic vaccination in fowl-breeding farms devoid

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of fowl pox confers solid immunity to the fowls for a period of at least one year. The vaccine causes no intense post-vaccination reactions and no generalizations. Vaccinated fowls do not eliminate transmissible virus.

The results scored in fowl pox control by using 2,150,000 doses of adsorbed fowl pox vaccine were considerably superior to those obtained by immunization with pigeon virus.

Avian plague and pseudo-plague

585.- L.PASCU, N.TIGAERU, G.ELEFTERESCU, E.POPA, V.NEGRE-
ANU. The influence of lyophilization of the viru-
lence and immunizing potency of "H" virus. St.
cerc. inframicrobiol., 1961, 12, 2, 205.

Lyophilization of "H" virus in the shape of allanto-amniotic fluid without the addition of any protecting agent results in a slight decrease of its virulence for embryos. In the investigations of the authors, the highest degree of protection was found to be exerted by inactivated normal horse serum + 5 per cent glucose, and the lowest one by 50 per cent saccharose solution.

Penicillin, streptomycin and sodium merthiolate do not alter the virulence for embryos or the immunizing potency of lyophilized "H" virus within a period of contact of 143 days at +4°C. The decrease in virulence for embryos to dilution 10^{-5} of non-lyophilized "H" vaccine exerts no influence on the immunizing potency of the product.

Lyophilized "H" virus maintains its initial immunizing potency for at least 204 days when preserved at +4°C.

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586.- L.PASCU, A.ELEFTERESCU. Investigations on the time required for the onset of immunity against pseudo-plague of fowls following vaccination with "H" virus. St.cerc.inframicrobiol., 1961, 12, 2, 217.

Vaccination with "H" virus performed 24 hours following parenteral infection with a virulent pseudo-plague strain and cohabitation protected 33.33 - 50 per cent of the fowls.

Protection conferred by the intramuscular administration of 1 ml of a 10^{-3} dilution amounts to 60 per cent at the end of 48 hours and to 100 per cent after 72 hours following vaccination.

587.- V.TOMESCU. The results of the investigations of the Institute of Inframicrobiology in the field of animal viral diseases. St. cerc. inframicrobiol., 1961, 12, suppl., 83.

Stress is laid on the favourable conditions created by the people's democratic regime for scientific research in the field of animal viral disease, in the R.P.R. Academy, under academican prof.St.S.Nicolau, founder of the Rumanian School of Inframicrobiology.

In ten years activity, the team of research workers for animal viral disease, have studied the most severe viral infections - contagious diseases - finding a solution to certain theoretical problems, and those closely linked to practice, developping new specific prophylactic methods against animal viral diseases.

Thus, in swine plague, investigations were carried out on active and passive immunity. The duration of immunity conferred by the two vaccines prepared in the Institute, the formol treated tissular vaccine adsorbed on aluminium hydroxide and the crystal violet vaccine was established. The inhibiting action of serum immunization on active immunization under certain conditions was determined. The condi-

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tions in which the lapine swine plague virus can be used were established.

In fowl plague, immunity conferred by the adsorbed vaccine and live vaccines, and technical improvement of vaccine preparation were studied.

In fowl pox, the immunobiologic relationship between the various avian strains was investigated and a vaccine prepared with the virus grown on the chorio-allantoid membrane. A special vaccine was prepared for pigeons with a turkey strain.

An epizootologic study was carried out on Aujeszky's disease. A hyperimmune serum was prepared, as well as vaccine applicable in the focus. Fox encephalomyelitis and canine contagious hepatitis (Rubarth) caused by the same virus were studied.

Moreover, investigations were carried out on foot-and-mouth disease, swine enzootic pneumonia, distemper, rabies, clavella (which was eradicated) and others.

In all, in these 10 years, more than 60 papers have been published in the country and abroad, two monographs (swine plague and foot-and-mouth disease) and 6 protocols were elaborated for the preparation of viral antisera and vaccines.

IX

Rickettsial and pararickettsial infections

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588.- N.CAJAL, D.SARATEANU, GH.MARINESCU. The Weil-Felix reaction, sero-reaction applied for differentiating inframicrobial primary pneumonia from pneumococcic and rickettsial ("Q" Fever) pneumonias. Comunicările Acad.R.P.R. 1951, 1, 8, 811.

Studying the Weil-Felix sero-reaction in 21 cases of inframicrobial primary pneumonia, it was observed that this reaction was positive in all the cases, in titers higher than 1/320, whereas in other pulmonary affections it is negative or seldom positive, attaining at the utmost titer of 1/160.

The authors conclude that the Weil-Felix reaction can be successfully used for the laboratory diagnosis of viral primary pneumonias and particularly for differentiation with the pneumococcic pneumonia and "Q" fever.

589.- N.CAJAL. Laboratory diagnosis of some Miyagavellas (benign lymphogranulomatosis, trachoma and viral primary atypical pneumonia) by means of the Weil-Felix test. St. cerc., inframicrobiol., microbiol., parazitol., 1951, 2, 1-4, 35.

Based on the presence of certain antigenic fractions common to the pararickettsia group, a study was carried out among other tests also on the Weil-Felix test in some miyagavellas (benign lymphogranulomatosis, trachoma and primary atypical pneumonia).

The investigations showed that the Weil-Felix reaction is positive in trachoma, irrespective of the stage of the disease, in benign lymphogranulomatosis, especially in the inguinal forms, and in a great number of atypical primary pneumonias.

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- 590.- N.CONSTANTINESCU, C.DRAGOMIR, E.DUCA, A.VITA,
A.DARINGA, D.CIOCHINA. Experimental investigations
on "Q" fever in Moldavia. St. cerc., inframicrobiol.,
microbiol., parazitol., 1951, 2, 14, 99.

Several strains of Rickettsia burneti were isolated from foci appearing almost simultaneously in the month of April, in two areas in Moldavia. The rickettsiae reproduced the characteristic infection in the guinea pig and were cultivated on the yolk sac of embryonated eggs. Cross immunity reaction established antigenic identity between R.burneti in Moldavia and R.Burneti isolated in other regions of the country.

- 591.- Conf.A.STROE, C.MUSATEANU, V.CIOCILTEU, G.MARINESCU,
Sp.MARINESCU. Typhus fever in children. Report read
at the Section of Medical Sciences of the R.P.R. Academy on December 30, 1951.

Clinical observations and laboratory data obtained in 393 cases of children suffering from typhus fever during the 1946-1947 epidemic, confirms the opinion that this disease is usually benign in children: moderate fever, short duration (less than 12 days), discrete or no eruption (15% of the cases), few respiratory and cardio-vascular complications, moderate neuropsychic signs.

Splenomegalia was observed in 60 % of the cases, enlarged liver in 25 % of the cases, abnormal urine analyses in 20 %, physico-chemical modifications of the cerebro-spinal fluid in 78 % of the cases.

The Weil-Felix reaction was more often negative than in the adult. No lethal cases were reported.

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592.- A.STROE, C.MUSETEANU, C.CIOCILTEU, G.MARINESCU, SP.MARINESCU. Clinical and laboratory study of 801 typhus fever patients during the 1946-1947 epidemic. Report read at the Section of Medical Sciences of the R.P.R. Academy, on December 30, 1951.

A detailed clinico-statistical and physiopathologic study was carried out on a group of typhus fever patients (801 cases), during the 1946-1947 epidemic. New data are presented in connection with blood pressure and modification of the cerebro-spinal fluid during typhus fever. Moreover, the statistic shows that the fever lasts 14 days, as described clinically, only in 15 to 20% of the cases. Fever does not decrease suddenly, but slowly in 3-6 days in 80% of the cases. The eruption appears in most cases on the 5th day of the disease and is often absent in severe cases: it can appear on the face, palms and soles, as in Mediterranean fever (13 out of 801 cases).

The authors describe a syndrome, the so-called "pressor-effect" on the 9th day in some of the patients presenting before death a rise of the blood pressure together with aggravation of the neuropsychic symptomatology.

593.- N.CONSTANTINESCU, C.DRAGOMIR, E.DUCA, M.DUCA, Z.CARAMAN, A.VITA, E.PALADE. Strains of meningo-pneumotropic viruses isolated in man and mice. Bul.Stiint. Sectia Med. 1952, 4, 1, 321.

Virus strains from patients with lymphocytic meningitis and from a mouse, caught in the home of one of these patients, were isolated on guinea pigs. The pneumotropic activity of the virus was made evident by wide-spread foci of amicrobial monocytic pneumonia, as well as by inclusions with basophil inclusions in the cytoplasm of the hepatic cells. The totality of these properties together with exclusive culture on the yolk sac of the embryonated egg, made it possible to correlate these viruses to those of the miyagawellae family, the psittacosis-lymphogranulomatosis-pneumonia group.

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594.- R.BRAUNER, H.LACK, H.ANGELESCU, V.NICOLAU, A.DEREVICI, A.CIUCULESCU, D.SARATEANU, I.PANDELESCU, M.ERACLIDE, T.PASCU, I.SANDU. Study of acute pneumopathies. Works of the Second session of the Medico-Pharmaceutic Institute, Bucharest, 1956, 90.

In order to establish the etiology, diagnosis, therapy and prophylaxis of certain acute atypical pneumopathies, the Hirst test, cold agglutination, the Weil-Felix reaction and hemogram are applied besides other diagnostic means.

In most cases, an influenza etiology was established, with a peak incidence in autumn and spring. The influenza viral etiology of certain fibrinous pleuresies was likewise established.

595.- C.IACOB. Benign inoculation lymphoreticulosis " Probleme de Inframicrobiol." Ed.Medic.Bucuresti, 1956, 244.

Recent data are given on this new nosologic entity, for which R.Debri proposed the designation of " cat's claws disease " and P.Mollaret " benign inoculation lympho-reticulosis ", in 1950. A description is given of the epidemiologic, etiologic and experimental aspects, symptomatology, clinical forms, positive and differential diagnosis, histologic modifications, and ending with therapy.

A fact stands out in literature: that anamnestic investigations of the 300 cases reported up to 1954, established in 83 % of the patients a single or repeated contact with cats. Relatively frequent epidemics are reported in one family or in a building, showing that the cat is a virus carrier and eliminator, without however presenting a manifest symptomatology. The possible geographic spread of this new viral disease is very great.

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- 596.- A.GIROUD, G.MARINESCU. Ocular and nervous reactions caused by injection of neorickettsiae or elements of psittacosis group into the anterior camera oculi.

C.R. des séances de l'Acad. Sci. 1957, 25, 2433-2435.

Inoculation of a virulent suspension of neorickettsiae into the anterior camera oculi of the rabbit gives rise to an almost total infection of the eye with lesions, particularly at the level of the cornea, ocular choroid and papilla. The reaction of the nervous system is manifested by meningo-encephalitis, with marked vascular modifications.

- 597.- P.GIROUD, G.MARINESCU. Hepato-nephritis in new-born rabbits due to neorickettsias and certain elements of the psittacosis group. C.R. des Séances de l'Acad. Sci. 1957, 26, 2566.

The harmful activity of neorickettsias, multiplying in the animal organism, is manifested by various deposits at the level of the blood vessels and viscera (lung, heart, liver, kidneys, spleen, brain). The most important histopathologic modifications were found at the level of the kidneys and liver, with prevalent degenerative lesions, which indicate the toxic action of certain neorickettsial strains.

- 598.- N.DRAGANESCU. Study of inclusion-like eosinophil formations within the cell cytoplasm in experimental neorickettsial pneumonia. Comunicările Acad. R.P.R. 1958, 8, 11, 1213.

Applying the Mann staining method, the author describes in the cytoplasm of the alveolar and mononuclear cells in neorickettsial pulmonary infection eosinophil formations closely resembling inclusions.

The presence of these formations in mononuclear and nervous cells, in experimental neorickettsial meningitis in rabbits, leads to the assumption that they are the final result of the struggle between the cell and the intracellular germ.

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599.- N.DRAGANESCU, HUNG TAO. Experimental neorickettsial meningitis in rabbits. Comunicările Acad.R.P.R., 1958, 8, 12, 1353.

It was possible to reproduce meningitis by suboccipital intraspinal inoculation to rabbits of a lung suspension from mice experimentally infected with a neorickettsial strain, isolated in Bucharest.

An infiltration with mononuclears and polynuclears is observed under the microscope at the level of the meninges.

Some of these mononuclear cells present intracytoplasmic eosinophil formations, identical with those described in the cytoplasm of alveolar and mononuclear cells, in experimental neorickettsial pneumonia. Perivascular lesions, inflammatory nodules and the presence of eosinophil formations within the cytoplasm of the nervous cells is observed at the level of the cerebral parenchyma, subjacent to the meninges.

600.- N.DRAGANESCU, D.SARATEANU. Serologic identification of a virulent neorickettsial germ isolated from a human case of atypical pneumonia. St. cerc., inframicrobiol., microbiol., parazitol., 1958, 2, 1, 61.

Positive micro-agglutinations performed with antisera prepared on rabbits against the Giroud antigen, as well as the morphologic characters and cultures of the virus, fully justifies the assumption that this germ isolated from a human case of atypical pneumonia belongs to the neorickettsial group described by Giroud.

601.- N.DRAGANESCU, D.SARATEANU. The presence of neorickettsial germs in the Rumanian People's Republic. Study of a neorickettsial strain isolated from a human case of acute pneumopathy. Report read at the Second Conference of the Czechoslovakian virologists, Smolenice-Bratislava, October 14-17, 1958.

A study was carried out on a viral agent isolated in

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the R.P.R. and cultivated in the yolk sac of embryonated eggs and intrapulmonarily in mice and the cotton rat, inoculated by intranasal route.

The round or oval isolated germ was stained red or blue by the Macchiavello staining method, on smears from the yolk sac and lung impressions from mice and cotton rats.

The positive serologic results in the micro-agglutination reaction show that this virus belongs to the neorickettsial group.

From the microscopic view-point, the prevalent lesions in mice and cotton rats inoculated by intranasal route are localized in the order of their severity, at the level of the lungs, kidneys, meninges and liver and are constituted of lymphocyto-polynuclear infiltrations, stasis and hemorrhagies. Inoculated intraspinally to the rabbit, this germ causes meningo-encephalitis.

The eosinophil formations in the cytoplasm of the alveolar and mononuclear cells in experimental neorickettsial pneumonia in mice and cotton rats, as well as in chick embryos inoculated in the yolk sac, seem to be the final result of the struggle between the organism and the germ.

602.- P.GIROUD, G.MARINESCU. Oculoencephalitic lesions caused by various neorickettsial strains. Bull. de l'Acad. Nat. Med., 1958, 142, 5-6, 135.

On the basis of certain clinical observations regarding ocular complications in several diseases caused by neorickettsiae, 16 rabbits were inoculated in the anterior camera oculi, uni- or bilaterally, with various strains (X₁₄, V₁₄, L₁₇, and Q₁₈) isolated in different regions, from cases with the most varied clinical syndrome.

The clinical and anatomic-pathologic study showed the presence of a quasi-total ocular infection (kerato-conjunctivitis, uveitis, optic neuropapillitis), with fairly important vascular meningo-cerebral reactions.

The toxic action of neorickettsiae multiplying in the

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anterior camera oculi explains both the ocular lesions and the meningo-cerebral modifications.

On the basis of this study, an analogy was drawn between the ocular and nervous lesions observed in rabbits and the oculo-cerebral manifestations observed in man during the course of the disease.

603.- P.GIROUD, G.MARINESCU, M-me N.DUMAS. Toxicity of two types of neorickettsial strains; evidence of hepatonephritis in new-born rabbits. Bull. de l'Acad. Nat. Med. 1958, 142, 17-18, 477.

Inoculation to new-born and suckling rabbits of various neorickettsial strains, isolated from sick animals and people and cultivated in lungs or the yolk membrane of the embryonated egg, gave rise to important hepatic and renal lesions, similar to those observed in renal pathology.

604.- D.SARATEANU, N.DRAGANESCU, R.PORTOCALA, M.CEPLEANU, N.IONESCU. Isolation of a viral agent at the limit of the rickettsia group from a case of atypical pneumonia. St.cerc.inframicrobiol., microbiol., parazitol., 1958, 2, 1, 55.

From the sputum of a patient with atypical pneumonia, a viral agent was isolated by inoculation into the yolk sac of 7-12 day embryonated eggs, maintained at 37° and 34°C; they were able to transmit to mice by intranasal route a serially transmissible lethal disease.

By means of the Machiavello staining method, polymorphous corpuscular formations, 200-500 mμ in size, staining red and blue, were revealed on the smears obtained from the yolk sac of the inoculated eggs and on mouse lung impressions on the basis of serologic examinations of the patient and the morphologic and cultivation characters of the virus, it is considered that the isolated agent may be classed in the neo-rickettsia group.

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- 605.- D.SARATEANU, EL.OPRESCU, N.DRAGANESCU. Isolation of an inframicrobial agent from the psittacosis-ornithosis group during an epizootic in ducks. St., cerc., infra-microbiol., microbiol., parazitol., 1958, 11, 4, 417.

During an epizootic in ducks a virus was isolated which, inoculated to mice by intracerebral, intranasal and intraperitoneal route, induced a lethal disease. In the smears from the lung, spleen, liver and peritoneal exudate, the causal agent appears polymorphous, staining red and blue by means of the Machiavello method and localized in the forms of intracellular particles or extracellular clusters. Inclusions are to be found in the cells of the alveolar epithelium.

The pathogenic and morphologic characters of the causal agent led the authors to list this virus in the psittacosis-ornithosis group.

- 606.- D.SARATEANU, N.DRAGANESCU, R.PORTOCALA, N.I.IONESCU. Neo-rickettsial pneumonia. Isolation and identification of the causative agent. Microbiol., parazitol., epidemiolog., 1958, 6, 529.

A case of acute pneumopathy is presented, from the sputum of which a germ was isolated, serologically identified as belonging to the neo-rickettsias described by Giroud and associates.

This germ inoculated to mice by intranasal route, induced pneumonia with microscopic lesions due to lymphocytic and polynuclear infiltration and necrosis.

- 607.- D.SARATEANU, N.DRAGANESCU, EL.OPRESCU. Isolation of viruses other than the influenza virus in pulmonary syndromes simulating influenza. The Third Unional Conference of Influenza, 25 Sept. 1958, Kiev.

The investigations carried out confirms the participation of the ornithosis virus in the etiology of atypical pneumopathies and draws attention to a new group of viruses, the neorickettsias, which can induce the same clinical syndrome.

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608.- R.BRAUNER, N.LACK, N.BUCUR, D.SARATEANU, N.DRAGANESCU.
Considerations on some cases of ornithosis. St. cerc.,
 inframicrobiol., 1959, 2, 1, 31.

81 cases of atypical pneumopathies, 8 of which are considered as ornithosis pneumonias and 25 as suspect of ornithosis, are described.

The clinical aspect of ornithosis is presented and attention is drawn to the existence of ornithosis cases in our country.

609.- PROF.V.BUSILA, I.VASILESCU, A.FITARAU, I.MONTAG
 (Clinica de Boli contagioase- Timisoara);
 D.SARATEANU, EL.OPRESCU-LISSIEVICI, EL.NASTAC (Insti-
 tutul de Inframicrobiologie, Acad.R.P.R. Bucuresti).
Contributions to the clinical study of ornithosis.
 Microbiol., parazitol., epidemiol., 1959, 2, 132.

The case records presented illustrate the diversity of the clinical forms, the intensity of the pulmonary syndrome and the difficulties of differentiating, on the basis of clinical criteria, ornithosis from other viral pneumopathies.

Diagnosis may be elucidated by means of serologic reactions or by isolation and identification of the causal agent. In the cases described, diagnosis was made by means of the complement fixation test.

610.- D.SARATEANU, N.DRAGANESCU. Experimental transmission to the cotton rat of a neo-rickettsial germ isolated from a human case of atypical pneumonia. Acta Virologica " 1959, 2, 1, 46.

It was possible to transmit lethal neo-rickettsial pneumonia to the cotton rat (lethal 95 hours after inoculation), by intranasal inoculation of a suspension of yolk sac or lung of mice which had died following the experimental disease.

Predominant microscopical lesions were to be found in

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the lung and consisted of inflammatory, oedematous and congestive lesions.

In the rest of the organs, lesions of circulatory order were to be found, the inflammatory lesions being discrete or absent.

By means of Giemsa staining, the presence of neo-rickettsial elementary bodies was revealed both inside the alveolar and bronchial cells and extracellularly.

611.- D.SARATEANU, H.TAO, Gh.MARINESCU. Experimental ornithosis in hamsters.

- Paper read at the Scientific Festive Session of the Institute of Inframicrobiology of R.P.R. Academy, 17-18 August, 1959.

- Paper read at the Interregional Conference of Morphology Tg.Mures, 18-19 December, 1959.

Experiments on 93 adult hamsters and 58 sucklings showed the morpho-pathologic modifications produced in this animal following inoculation of the ornithosis virus by intracerebral, intraperitoneal or intranasal route.

From the data obtained, it results that the histopathologic criterion cannot be used for differentiating ornithosis virus strains.

612.- D.SARATEANU, E.NASTAC, B.FUHRER, EL.OPRESCU, T.HUNG. Investigations on ornithosis virus infections in the Rumanian People's Republic. St. cerc., inframicrobiol., 1960, 11, 1, 73; Biull.Nauc.Inform.1960,2,137; Acta Virol.Ung.1960,7,2,186.

Eight ornithosis virus strains were isolated from ducks(5), turkeys(2), and geese(1), pathogenic for the white mouse inoculated by intranasal route, and less pathogenic when inoculated by intraperitoneal route. These strains were also pathogenic for the chick embryo inoculated into the yolk sac or the chorio-allantoic membrane. The antisera, prepared with the isolated strains in cocks, produced agglutination of the specifically stained antigen and gave posi-

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tive results in the seroneutralization and complement fixation tests in the presence of the specific antigen, permitting identification of these strains as ornithosis virus strains.

The morphopathologic alterations produced following inoculation of the ornithosis strains to the white mouse, suckling and adult hamster and irradiated or non-irradiated white rats, were studied.

In order to detect ornithosis infections in man, intradermoreactions and complement fixation tests were performed with the sera of patients presenting a clinical syndrome of PAP, caretakers in bird-breeding farms, the personnel of the bird slaughter houses, as well as pigeon and parrot breeders, etc. These tests yielded a high proportion of positive results (30.9%-83%), demonstrating the wide spread of ornithosis infection in the country. Intradermoreaction is a sensitive, early and specific test, that permits detection of the infections even in the first 5 days of the disease. Complement fixation is more sensitive in human cases, and the authors stress the necessity of using double or even triple serum samples in order to obtain conclusive results.

613.- I.BERLOGEA, I.STRATI, S.SCHOENFELD, D.SARATEANU, GH.MARINESCU, W.T.LIAN: Data on ornithosis infection in the irradiated and non-irradiated white rat. St. cerc.-inframicrobiol., 1960, 11, 1, 111.

An attempt was made to transmit ornithosis to the white rat, a species that is resistant to this infection, by using ionizing radiations in order to overcome the natural resistance of the animal. The investigations were carried out in 47 white adult rats, that received a dose of 5100r each exposure. After 3 days, the rats were inoculated by intracerebral or intraperitoneal route with duck ornithosis strains.

The experiments showed that the lethal disease cannot be transmitted to the irradiated white rat, which presents

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no clinical symptom of the disease. Complement fixation with the sera of irradiated animals yielded titers twofold lower than those of the non-irradiated animals. It is considered that the dose of ionizing radiations used was not sufficient to modify the cellular systems in the rat, so as to satisfy the synthesis requirements of the ornithosis virus, for reproducing the experimental disease.

614.- V.T.BUSILA, R.ALEXANDRESCU, D.BACALOGU, D.SARATEANU, EL.OPRESCU-LISSIEVICI. Clinical and morphopathologic aspects in an epidemic due to ornithosis virus. St. cerc., inframicrobiol., 1960, 11, 2, 187.

Investigations were carried out on an epidemic due to the ornithosis virus, that broke out in a duck breeding farm, affecting the 3 caretakers and the watchman. Subsequently, to these cases another case was added - the mother of one of the caretakers, in which the infection is explained by direct contact. The clinical diagnosis was confirmed by complement fixation that was positive for all the patients, and by isolation of the virus. The epidemiologic survey showed that the epidemic had been preceded by an epizootic among the young and adult ducks. A single human lethal case was registered; the work relates the more important morphologic aspects observed at necropsy and at the microscopic examination.

615.- D.SARATEANU, E.NASTAC, V.T.BUSILA, A.ALEXANDRESCU. Laboratory study of an epizootic due to the ornithosis virus, followed by a human epidemic. St. cerc. inframicrobiol., 1960, 11, 2, 195.

The existence of an ornithosis epizootic in ducks, followed by 5 human cases, is reported, showing once again the possible transmission of ornithosis from birds to man and from man to man.

The presence of antiornithosis agglutinating antibodies in the sick, convalescent or apparently healthy ducks, and of complement fixing antibodies in the sera of human

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cases, as well as isolation of some virus strains from birds and a lethal human case, pointed to a common ornithosis etiology of the epizootic and epidemic studied.

616.- G.MARINESCU, D.SARATEANU, T.HUNG. Comparative study of histologic alterations in white rats inoculated with various autochthonous ornithosis strains. St. cerc. in-framicrobiol., 1960, 11, 2, 201.

The authors describe the evolutive aspects of the histopathologic picture following inoculation to the adult white mouse of 3 different ornithosis strains isolated in the R.P.R. by various routes.

Inoculation of these strains by intranasal route induces characteristic ornithosis pneumonia foci. The TC strain (turkey) gives rise sooner to interstitial and alveolar processes (3 to 7 hours) than the CR₁ (duck) and TG (goose) strains.

The strains studied manifest a low pathogenicity for the white mouse following inoculation by intraperitoneal route. Stasis, degenerative lesions and hyperplasia of the reticulo-endothelial system were noted at the level of the spleen and liver.

Intracerebral inoculation produces lethal meningo-encephalitis. The TC strain (turkey) produced serous or lymphocytic meningo-encephalitis even after intranasal inoculation.

Elementary bodies were found in all the organs: lung (alveolar cells, bronchic cells and macrophages), brain (infiltration mononuclears), liver and spleen (reticulo-endothelial cells).

617.- D.SARATEANU, T.HUNG, G.MARINESCU. Experimental ornithosis infection in the hamster. Rev. Sci.Med.1960, 5, 1-2, 109.

Three ornithosis strains were inoculated by intranasal, intraperitoneal and intracerebral route, to 93 adult

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and 58 young hamsters. The results obtained point to the possibility of transmitting the lethal disease only to young hamsters and only following intranasal or intraperitoneal inoculation.

The present paper describes the morphopathologic alterations produced by inoculation of the strains by various routes. The histopathologic criterion cannot serve to differentiate the strains.

Irrespective of the route of inoculation used, the strains presented marked pneumotropism.

618.- T.HUNG. Experimental and morphopathologic investigations in the psittacosis-ornithosis group.
St. cerc. inframicrobiol., 1960, 11, 3, 425.

The present paper deals with four experimental investigations carried out in the white mouse, adult and young hamsters, chick embryonated eggs and rabbits, with the ornithosis virus strains (CR, TC and TG) isolated in Rumania. The various staining methods used and studies in the optical and electron microscope led to the following results:

In the development of the ornithosis virus it was not possible to confirm the existence of the evolutive cycle described by Bedson and other authors. From the moment in which the virus penetrates into the host cell up to rupture of the cell, the virus is to be found in the form of elementary bodies, that can be modified, agglutinated, enlarged by the defence action of the cell.

The presence of inclusions proper was not observed, since they were formed of individual elementary bodies. In the electron microscope, large elementary bodies with a low density and small bodies with a high density, were observed.

Apart from the cytoplasmic alterations, examination in the electron microscope also showed alteration of the nucleus.

The presence of viral elementary bodies in the endothelium of the small blood vessels and infiltrative elements, proves dissemination of the ornithosis virus by hematogenous route.

..... Marked pneumotropism of the strains studied was observed, irrespective of the animal or route of inoculation used. The morphologic criterion cannot serve to differentiate the ornithosis strains.

..... Intradermoreaction is a sensitive, specific and early test, which can detect ornithosis infection in the first 5 days of the disease. Complement fixation is just as specific, but not so early or lasting as intradermoreaction.

619.- D.SARATEANU. Psittacosis-ornithosis. Generalities, history, characters of the virus, methods of diagnosis. St. cerc. inframicrobiol., 1960, 11, 3, 445.

The author reviews the data in specialty medical literature referring to infections produced by ornithosis-psittacosis germs, and especially to nomenclature, taxonomic classification and history of the disease in man.

The morphologic and immunologic characters of the viruses of this group are described, as well as the methods of diagnosis. The value of various diagnostic serologic tests and the way in which the results should be interpreted, are discussed.

620.- C.SURDAN, G.SORODOC. Infections in mammals produced by inframicrobes of the pararickettsial group. St. cerc. inframicrobiol., 1960, 11, 3, 459.

..... The most recent bibliographic data regarding infections produced by germs of the psittacosis-ornithosis-lymphogranulomatosis group are reviewed. The authors briefly describe the anatomic-clinical, epizootologic characters and methods of diagnosis, and the control and prevention of diseases produced by pararickettsias in various mammal species.

..... The economic and epidemiologic importance of pararickettsial infections in various mammal and bird species demands the organization of a systematic study of these affections in our country.

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General considerations are made on unification of the etiologic nomenclature, the best being that proposed by Acad. St. S. Nicolau. Opinions are likewise stated concerning the designations given to the various morbid entities described by different authors in the same or different species, which have factually the same etiology. The authors raise the problem of mixed pararickettsial and bacterial infections, that have been considered up to the present as having a bacterial etiology.

In the investigations under way, an inframicrobial agent with characters similar to those of the pararickettsias was isolated from cases of swine enzootic pneumonia. Similar germs were also isolated from cases of ewe abortion and calf pneumoenteritis.

621.- D. SARATEANU, E. NASTAC, B. FUHRER, EL. OPRESCU, C. T. HUAI, T. HUNG. Comparative investigations on the diagnostic value of complement fixation and of intradermoreactions in ornithosis. Microbiol., parazitol., epidemiol., 1960, 3, 253.

By using 3 ornithosis strains, in intratracheal inoculation the authors induce disease in rabbits, in which they subsequently test the comparative value of the intradermoreaction (I.D.R.) and complement fixation test (C.F.T.). According to the data obtained, in 70 human cases investigated there was a concordance of 72.3% between the C.F.T. and the I.D.R., while in the experimental investigations the concordance was of 100%. The C.F.T. seems to be more sensitive than the I.D.R. in human cases, an immunity index of 51.4% being obtained with the former and 35.7% with the latter. The experimental investigations showed the I.D.R. to be a sensitive, specific and early test which affords the possibility to detect the infection as soon as during the first 5 days of the disease. Repeated intradermal inoculation of the antigen does not cause the formation of complement fixing antibodies. In a sensitized organism, the I.D.R. may play the role of a booster inoculation. The C.F.T. is just

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as specific, but less early and persistent than the I.D.R.

622.- D.SARATEANU, T.HUNG, S.DUMITRESCU, N.I.IONESCU. Study of the behaviour and morphopathologic alterations produced by ornithosis strains in the chorio-allantoic membrane of the developing chick embryo. St. cerc., inframicrobiol., 1961, 12, 1, 83.

Investigations were carried out on the behaviour and morphopathologic alterations produced by ornithosis strains in the chorio-allantoic membrane of the developing duck embryo. It is shown that propagation of the ornithosis infection to the unaffected tissues also occurs by circulatory route.

Histologic alterations are initially due to the toxin and subsequently to the action of the virus.

The histopathologic criterion cannot be used to differentiate the strains with a low virulence, inoculated into the chorio-allantoic membranes.

The presence of viral elementary bodies, of various aspects and sizes, was demonstrated on thin sections in the electron microscope.

623.- ACAD.ST.S.NICOLAU . Cardiovascular affections induced by inframicrobes. St. cerc. inframicrobiol., 1960, 11, 4, 619.

The author relates the observations, experimental data, interpretations and conclusions of prof.P.Giroud and co-workers in the problem of cardiovascular affections produced by inframicrobes. The works of prof.P.Giroud have proved that numerous cases of thromboarteritis obliterans and cardiac infarct are caused by rickettsias, pararickettsias and neorickettsias. The epidemiologic, clinical and histopathologic findings and experimental data referring to the isolation and identification of inframicrobial germs, and the results of serologic investigations in various cardiovascular affections are summarized. On the basis of the data presented, the author makes a series of additional considerations on the importance of

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the tests used, interpretation of the results, therapy and wide prospects of the investigations in this field, which will contribute to the preservation of health, recovery of numerous arteritis patients and the prevention of cardiac infarct or coronary thrombosis, affections that are often fatal.

624.- V.T.BUSILA, D.SARATEANU. On the prevention of ornithosis deduced from epizootologic and epidemiologic data. Microbiol. parazitol., epidemiol., 1960, 5, 405.

The data in literature on the epizootologic and epidemiologic aspects of ornithosis are reviewed. After analysis and discussion of the means of control, certain measures are recommended that might interrupt the infective chain. These measures are addressed to the source of infection, the receptive mass and interruption of the routes of dissemination.

The proposals are deductive to a great extent, therefore theoretical and perhaps difficultly applicable, but they aim at stimulating the discussions following which definite norms will be established.

625.- D.SARATEANU, C.SURDAN, G.SORODOC, B.FUHRER-ANAGNOSTE. Isolation of an inframicrobe from a focus of ewe enzootic abortion. St. cerc. inframicrobiol., 1961, 12, 1, 95.

An inframicrobe was isolated concomitantly with *Salmonella abortus ovis* from a focus of ewe enzootic abortion. The inframicrobe grows in the yolk sac of the 7-days old chick embryo and is pathogenic for the mouse inoculated by intranasal or intracerebral route.

In smears from the yolk sacs and from mouse organs, stained by the Macchiavelli method, the intra- and extracellular elementary bodies have a polymorphous aspect, are large and stain red and blue.

The epizootologic character of the disease, the morphologic, tinctorial and immunobiologic properties of the isolated inframicrobe, led to the conclusion that it was similar

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to the ewe enzootic abortion virus, listed in the Ornithosis-psittacosis group.

- 626.- ACAD. ST. S. NICOLAU, G. SURDAN, D. SARATEANU, P. ATHANASIU, B. FUHRER-ANAGNOSTE, C. ILIESCU, R. RADESCU. Viral etiology in the field of cardiovascular affections. I.-Isolation of viruses from the blood of patients with cardiovascular affections. St. cerc., inframicrobiol., 1961, 12, 3, 275.

For the first time in specialty literature, the authors describe the isolation of three viral agents from the blood of patients with various cardiovascular affections (Reynaud's syndrome, thrombo-angitis obliterans, cardiac infarct).

The isolated strains presented common characters, similar to those of the Rickettsia and Pararickettsia, demonstrated by cultivation in the yolk sac of embryonated eggs: pathogenicity for the white mouse and guinea-pig, large size and stainability by the Giemsa or Macchiavelli method.

The serologic investigations showed that two strains exhibited an antigenic structure common to the ornithosis viruses, and the third strain was closer to R. prowazeki.

- 627.- D. SARATEANU, G. SURDAN, G. SOROBOC, B. ANAGNOSTE, D. DUMA, M. MARTA, V. CUPSA. Investigations on an ornithosis epizootic in canaries, accompanied by human cases. St. cerc. inframicrobiol., 1961, 12, 3, 347.

During an epizootic among canaries (*Serinus canaria*), a virus was isolated which was listed, in view of its biologic, morphologic and serologic characters, in the group of avian ornithosis viruses.

The isolated virus was also pathogenic for the siskin (*Fringilla carduelis spinus*), goldfinch (*Carduelis elegans*), greenfinch (*Chloris chloris chloris*), linnet (*Carduelis cannabina*) and quail (*Coturnix coturnix*).

The three caretakers and the other canaries contracted the disease following contact with the sick birds.

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628.- D.SARATEANU, G.SORODOC, G.SURDAN, B.FUHRER-ANAGNOSTE.
Bovine ornithosis bronchopneumonia and the possibilities of human contamination. St. cerc. inframicrobiol., 1961, 12, 3, 353.

From two foci of enzootic pneumonia of calves, 2 virus strains were isolated which were listed in view of their biologic, morphologic and serologic characters, among the ornithosis viruses belonging to the Pararickettsia group.

Serologic investigations revealed the presence of anti-ornithosis antibodies in 31.7 per cent of the calves that had been sick and in 44 per cent of the caretakers.

The presence of positive reactions among men led the authors to raise the question of considering enzootic pneumonia of calves as an anthropezoenosis.

629.- D.SARATEANU, G.SURDAN, G.SORODOC, B.ANAGNOSTE, A.BERCAN, R.KRESTEI. Investigations on pararickettsial abortion of ewes (Study of the experimental disease and attempts at active immunization). St. cerc. inframicrobiol., 1961, 12, 4, 441.

Investigation of the pathogenic activity for pregnant ewes of a pararickettsial strain, isolated from sheep abortus showed that it induced a minor disease followed by abortion, premature birth of non-viable lambs and pneumoenteritis of the new-born lambs. Premature births or abortions were preceded by prodromal signs and followed by ante- and post-partum accidents. The experimentally infected ewes presented leukopenia and lymphocytosis, as well as viremia, constantly for 30 days. Complement fixing antibodies were found only in some ewes 7 to 21 days after the infection, and in the lambs after sucking the colostrum for the first time.

Pararickettsias were isolated from the abortus organs, the foetal membranes and the lechia.

Active immunization, which could not be overcome by a challenge inoculation of 175,000 mice LD₅₀ was obtained in experiments with a 0.1 per cent formulated aluminium hydroxide

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adsorbed vaccine and a silvered vaccine; 6 to 20 days after vaccination, the ewes presented complement fixing titers of $1/8 - 1/64$.

On the basis of their researches, the authors demonstrate the specificity of pararickettsias in the etiology of enzootic abortion of ewes.

630.- C.SURDAN, D.SARATEANU, G.SORODOC, P.ATHANASIU, B.ANAGNOSTE, I.BERCAN, R.KRESTEL. Experimental study on paracettsial pneumonia of calves. St. cerc. inframicrobiol., 1961, 12, 4, 451.

The authors describe the results obtained in experimental infection of calves with a pararickettsial strain isolated by them also from calves and maintained in the laboratory by serial passages in mice and embryonated eggs. The calves develop a febrile catarrhal disease accompanied by a relapsing pneumo-enteric syndrome, stagnation of growth and progressive debility. From the hematologic viewpoint leukopenia and lymphomonocytosis were found. Anatomic-pathologically, infiltrative lymphocytic broncho-pneumonia, proliferative lesions and haemorrhage in the lymph nodes and spleen, hepatitis, intestinal and parenchymatous nephritis and proliferative endothelitis were found. Elementary bodies were revealed in the tracheo-bronchic epithelium, alveolar endothelium, in the epithelium of the tubuli contorti, the macrophages of the spleen and liver and the blood leucocytes. Viremia lasts more than 40 days. In a single case was there a gram negative coccobacillus isolated from the lung; it seriously aggravated the evolution of the disease. Kinetic-serologic investigations showed that only in a single calf were complement fixing antibodies, found after 7 days from the beginning of the infection. The results obtained showed that the primary etiologic agent of bronchopneumonia and enteritis of calves is a pararickettsia identical to the ornithosis virus.

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631.- ACAD.ST.S.NICOLAU, C.SURDAN, D.SARATEANU, P.ATHANASIU, G.SORODOC, B.ANAGNOSTE, C.ILIESCU, R.RADESCU. Viral etiology in the sphere of cardiovascular affections. II. Viral study of fifty cases. St. cerc. inframicrobiol., 1961, 12, 4, 525.

The authors describe the results obtained in their investigations on 50 patients with various cardiovascular diseases. Forty one of these 50 patients presented a positive serologic reaction to rickettsial and pararickettsial antigens, the highest proportion being found to R.burneti (56.97%). From these patients, 24 strains were isolated, 15 of which belonged serologically to R.burneti, 3 to R.prowazeki, 1 to R.moseri, 12 to the pararickettsias (Q.18), of which 2 both to R.burneti and to pararickettsia Q-18.

The isolated agents were cultivated in white mice and in the yolk sac of embryonated eggs. Intraperitoneal inoculations to guinea pigs induced the appearance of serum antibodies.

The histopathologic examination showed the presence, in the damaged vessels, of elementary bodies stainable by the Macchiavello method.

Antibiotics from the tetracyclin group exerted favourable action in the cases studied and brought about negative serologic reactions.

632.- ACAD.ST.S.NICOLAU, D.SARATEANU, C.SURDAN, P.ATHANASIU, B.ANAGNOSTE, G.SORODOC, C.ILIESCU, R.RADESCU, E.MALITCHI. Viral etiology in the sphere of cardiovascular affections. III.- Thromboangitis obliterans with migratory phlebitis of rickettsial origin. St. cerc. inframicrobiol., 1961, 12, 4, 535.

The authors describe a case of thromboangitis in the legs, with migratory phlebitis, in which the isolation succeeded of a virus whose morphologic and immunologic characters classed it with the rickettsia group. The isolation was

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carried out both from blood and from the biopsy of a thrombosed venous fragment.

Microagglutination tests, carried out with the sera of the patients and with guinea-pigs immunized with the isolated strain, revealed the presence of agglutinating antibodies to R.burneti. Elementary bodies were found on the histologic sections of the thrombosed venous fragment.

All these data prove the viral etiology of the case described.

633.- ACAD.ST.S.NICOLAU, D.SARATEANU, P.ATHANASIU, C.SURDAN, G.SORODOC, B.ANAGNOSTE. Viral etiology in the sphere of cardiovascular affections. IV.- Experimental and histopathologic study of some cases of rickettsial thromboangitis obliterans. St. cerc. inframicrobiol., 1961, 12, 4, 543.

Four virus strains were isolated from the blood or surgically excised arterial fragments of 4 thromboangitis patients. The germs were isolated in white mice and the yolk sac of embryonated eggs.

Serologic investigations carried out with the sera of guinea-pigs inoculated by intraperitoneal route with the isolated strains permitted identifications of the germs as belonging to R.burneti.

The histopathologic aspects of the arterial fragments studied, as well as the presence of elementary bodies on the sections are a further argument in favour of the rickettsial etiology of the cases studied.

634.- ACAD.ST.S.NICOLAU, P.ATHANASIU, V.VELICU, I.MARDARE. Viral etiology in the sphere of cardiovascular affections. V.- Morphologic study of a myocardial infarct. Histologic evidence of a rickettsial or pararickettsial infection. St. cerc., inframicrobiol., 1961, 12, 4, 551.

Histopathologic investigations were carried out on the general non-specific and specific lesions in a lethal case

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of myocardial infarct.

The histopathologic aspects of a chronic infection were found, in which elements of an inflammatory reaction linked to the acute event were added. Moreover, corpuscular formations were observed in the heart, coronary artery and lung, morphologically similar to the rickettsias or pararickettsias.

635.- D.SARATEANU. The results obtained by the Institute of Inframicrobiology in the field of pararickettsial affections. St. cerc., inframicrobiol., 1961, 12, suppl. 95.

The results obtained by different research workers of the Institute of Inframicrobiology in the field of pararickettsial affections are described.

Investigations on the isolation of ornithosis-psittacosis virus strains from birds, man and mammals, reproduction of the experimental disease, anatomo-pathologic alterations produced by these strains and their morphology are reported.

The author likewise describes the results obtained in epizootologic, epidemiologic, immunologic and diagnostic problems.

As the nomenclature no longer corresponds to present findings, the author proposes the name of pararickettsias AM (A: aves, M: mammalia) for the ornithosis-psittacosis germs, the only pararickettsias that affect both birds and mammals.

636.- G.MARINESCU, D.SARATEANU, N.DRAGANESCU. Experimental morphopathological patterns in neorickettsial infections in animals. St. cerc. inframicrobiol., 1961, 12, suppl. 229.

The appearance of particular histopathological patterns was recorded following the inoculation by various routes of various laboratory animals with strains of neorickettsias

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supplied by the Pasteur Institute (Paris) and with one autochthonous strain.

Inoculation into the anterior eye chamber in adult rabbits, results in severe keratoconjunctivitis, iridocyclitis and neurorretinitis, and in slight secondary meningo-encephalitis.

Intraperitoneal inoculation in new-born rabbits induces the appearance of severe hepatonephritis.

Intranasal inoculation in white mice and cotton rats causes fatal pneumonia. The infection may be transmitted by serial passages. Corpuscular and oxiphile formations resembling inclusion bodies are present in the cytoplasm of the alveolar cells.

Intraspinal inoculation in adult rabbits causes fatal meningo-encephalitis. Intra- and extracellular corpuscular formations of the above type are present, as well as inclusion bodies in the mononuclear cells of the cerebrospinal fluid and nervous system.

637.- ACAD.ST.S.NICOLAU, D.SARATEANU, E.NASTAC, E.OPRESCU, B.FUHRER-ANAGNOSTE, C.T.HUAI. A study concerning active ornithosis immunization in white mice. St. cerc., inframicrobiol., 1961, 12, suppl., 315; Rev.Sci.Med. 1961, 6, 1-2, 81.

The authors have studied the immunogenic action in white mice of two types of ornithosis vaccine, viz. metallized vaccine prepared by attenuation with Ag ions and formolized vaccine. Ornithosis virus strains isolated in the R.P.R. and adapted to mouse lung and the chorio-allantoic membrane were used for the preparation of these vaccines. Virus attenuation was performed by means of AgNO₃ in various concentrations (1.5%, 3%, 5%, 7%) or by means of 5% formol. The vaccines were administered by intramuscular route while the challenge inoculation was performed intranasally.

Attenuation by means of Ag ions was found to be superior to attenuation by means of formol, optimum results being obtained with 3% silver-treated vaccine. Vaccines prepared from lung tissue proved more efficacious than egg vaccines.

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638.- D.SARATEANU, C.SURDAN, G.SORODOC, B.FUHRER-ANAGNOSTE, AL.ROMAN, D.DUMA, M.MARTA. Investigations concerning the identification of a virus belonging to the pararickettsia group following its isolation from calves suffering from enzootic broncho-pneumonia. St. cerc, inframicrobiol., 1961, 12, suppl., 323; Rev.Sci.Med. 1961, 6, 1-2, 109.

By investigating 4 cattle breeding units comprising 480 calves in various regions of the Rumanian People's Republic, the authors were able to isolate a virus which, when inoculated by the intranasal route in mice, induces a fatal disease transmissible by serial passages, and causes death of the embryos following inoculation in the yolk sac of embryonated eggs.

The pathogenic agent is of large size, polymorphous and may be stained by means of Macchiavello's method. In smears or impressions from the lymph nodes of calves, mouse lung or yolk sac it may be found intra- or extracellularly.

Its pathogenicity, morphological and immunological characters led the authors to class this virus among the ornithosis viruses of mammals from the Pararickettsia group.

639.- D.SARATEANU, G.SORODOC, B.FUHRER-ANAGNOSTE, C.SURDAN, E.NASTAC, E.LISSIEVICI-OPRESCU, D.DUMA, M.MARTA, AL.ROMAN Serological investigations concerning the incidence rate of ornithosis antibodies in some species of mammals. St. cerc., inframicrobiol., 1961, 12, suppl., 329; Rev. Sci.Med. 1961, 6, 1-2, 101.

By using the complement fixation test, the authors investigated 262 sera collected from sheep and cattle from different regions of the R.P.R. and recorded a mean serological index of 25.9 per cent for ornithosis (68 positive reactions).

In calves, the figures ranged from 7.3 to 50 per cent and in sheep it amounted to 20.3 per cent, whereas in adult cattle it was of 0 per cent. Authors presume that the recorded indices are closely related to the degree of infection of the

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investigated group as well as to the age of the animals. The paper brings some contributions to the study of infections caused by viral agents of the ornithosis group in mammals.

640.- D.SARATEANU, E.NASTAC, B.FUHRER-ANAGNOSTE, G.SORODOC, C.SURDAN, E.LISSIEVIGEL-OPRESCU, V.SUTEU, L.ANENCOV. The incidence rate of ornithosis antibodies in workers in the zootechnical field. St. cerc. inframicrobiol., 1961, 12, suppl., 365; Rev.Sci.Med. 1961, 6, 1-2, 105.

By performing complement fixation tests with 344 sera from workers in the zootechnical field or in slaughter-houses, the authors have recorded a mean index of positive ornithosis reactions amounting to 43.1 per cent.

The highest indices were recorded in breeders of psittacines (72.7 per cent), pigeons (58.5 per cent) and palmipedes (49.05 per cent). The authors also emphasize the importance of mammals as sources of infection in man, a fact resulting from the high serum-positive indices recorded in slaughter-house workers and in those employed in the department of anti-swine-plague products (40 per cent).

The widespread occurrence of infections due to avian and mammalian ornithosis strains belonging to the Pararickettsia group is pointed out.

641.- C.SURDAN, D.SARATEANU, G.SORODOC, B.FUHRER-ANAGNOSTE, E.ANENCOV. Isolation of a virus belonging to the pararickettsia group from an enzootic of granulous vulvovaginitis in cattle. St. cerc., inframicrobiol., 1961, 12, suppl., 373; Rev.Sci.Med. 1961, 6, 1-2, 127.

From the vaginal scrapings of cows suffering from contagious granulous vaginitis a virus was isolated in egg cultures, which proved to be pathogenic for the white mouse. The LD₅₀ in mice is of $10^{-4.5}$.

The virus isolated belongs to the group of large viruses; it is polymorphous, multiplies in the shape of intra- and extracellular colonies, and stains by Macchiavelle's

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method. A 1/10 dilution of ornithosis serum neutralizes 700 LD₅₀ in mice.

The biological, morphological and serological characters of the virus isolated demonstrate its relation to the ornithosis viruses.

642.- I.BERLOGEA, S.SHOENFELD, I.STRATI, D.SARATEANU.
Some data concerning ornithosis infection in irradiated and in non-irradiated white mice. St. cerc. in-framicrobiol., 1961, 12, suppl., 381.

By irradiating white mice with a single dosis of 300-390 r the susceptibility to experimental infection with the ornithosis virus was increased.

Following irradiation, ornithosis infection could be induced by routes by which no infection is normally caused in the case of certain strains.

643.- G.MARINESCU, F.CARUNTU, L.PAUL, A.TIUCREA. Histopathologic aspects in a case of repeated typhous fever. Report read at the session of the Institute of Infra-microbiology, November 20, 1961.

A case of typhous fever, repeated after 36 years, is described.

The histologic lesions were predominant at the level of the heart and spleen, of particular intensity in the reticulo-endothelial system and connective tissue, probably linked to the latent action of rickettsias.

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644.- S.NICOLAU, R.PORTOCALIA, N.CAJAL . Staining and morphology of the mumps virus obtained by parotid puncture- Recueil d'études médicales, Bucarest, 1949, 189.

In the fluid obtained by parotid puncture from 12 mumps patients, it was possible to reveal, by means of the Morosov staining method or by that of Nicolau with phenicized isamine, elementary cocciform bodies with an approximate diameter of 120 μ . These corpuscular formations of equal size are to be found on the smears grouped in clusters.

On the smears made with normal parotid secretion, corpuscular formations may be found, but much more seldom, of variable sizes. These may exceptionnally represent biophyto inframicrobes or, rather, normal cytoplasmic granules, which cannot be taken for mumps elementary bodies.

645.- ACAD. ST.S.NICOLAU, R.PORTOCALIA, N.CAJAL. Cytoplasmic inclusions in human salivary cells in epidemic mumps patients and normal persons. Bul. Stiint. Acad. R.P.R. Sect. St. med., 1950, 2, 5, 411.

In the cytoplasm of the cells found in the saliva of mumps patients, it was possible to reveal, by means of the modified Mann staining method, the inclusions described by Sohier and Jaulmes. The size of these spherical or oval inclusions ranges between 2-5 μ . As a rule, they stain red, sometimes light blue or a shade intermediary between red and blue; they are surrounded by a more or less accentuated halo. These formations are to be found in 100 per cent of the mumps cases.

A comparative study of the cells found in the saliva and of the epithelial cells, scraped from the mouth epithelium in normal persons, revealed the presence of these formations in 20 out of the 21 persons under observation.

The high percentage of these inclusions in normal persons, definitely leads to the conclusion that the inclusions found in the saliva cells of mumps patients and described by Sohier and Jaulmes as pathognomic for epidemic mumps, are

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" spontaneous " inclusions produced by the viruses that exist in a latent state in the mouth of healthy persons.

646.- I.FRIEDMAN, I.SAMUEL, T.SANDULESCU. Three mumps virus strains isolated from the cerebro-spinal fluid of epidemic mumps patients. Comunicările Acad.R.P.R. 1955, 5, 9 1385.

Three mumps virus strains were isolated from the cerebro-spinal fluid of children suffering from epidemic mumps. Two of the children exhibited clinically apparent meningeal forms and the third a cytologic meningitis. The strains isolated from the patients with meningeal forms yielded from the first passage positive hemagglutinations; the strain isolated from the patient with cytologic meningitis acquired weak hemagglutinating properties at the second passage.

Stress is laid on involvement of the nervous system in mumps, which can occur before the appearance of the disease, sometimes without any clinical sign of meningitis.

647.- I.SAMUEL, I.FRIEDMAN, R.WINGLER, T.SANDULESCU. Complement fixation in the diagnosis of mumps. St.cere., inframicrobiol., microbiol., parazitol., 1957, 8, 3. 387.

Antigen V for complement fixation was prepared from the allantoic fluid infected with the autochthonous strain.

Tests made with this antigen on 135 sera in complement fixation, demonstrated the specificity of the antigen and the utility of the test in the diagnosis of mumps. The authors considered as positive for the antigen prepared by them a titer of 1/16 for a single test and at least a four-fold increase for two tests, on condition that the first serum should be taken in the first days of the disease.

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648.- I.FRIEDMAN, I.SAMUEL, R.WIEGLER, T.SANDULESCU.
Comparative value of serologic tests in mumps
 St. cerc., inframicrobiol., microbiol., parazitol.,
 1957, 8, 4, 571.

A comparative study was carried out on the value of complement fixation (C.F.) and hemagglutination-inhibition (H.A.I.) on 40 sera from 24 patients or convalescents suffering from mumps and 2 normal subjects without mumps in their past history. Parallel values were found between the titers of the two tests. Earlier more characteristic and higher titers are obtained with C.F. Following these investigations, C.F. is considered as sufficient and more indicated for the serologic diagnosis of mumps. The amylasuria and amylasemia tests likewise constitute a useful and early indication.

649.- I.SAMUEL. Isolation of the mumps virus from the cerebro-spinal fluid. Study of strains. St. cerc., inframicrobiol., microbiol., parazitol., 1958, 2, 1, 51.

Four mumps virus strains were isolated by inoculation of the cerebro-spinal fluid drawn from mumps patients, with or without meningeal signs, into the amniotic cavity of chick embryo.

Two strains (SE and GN) were adapted to the allantoic fluid and to the anterior camera oculi of the guinea pig. The strains differed from the view-point of their adaptation capacity and with regard to the correlation between the infectious and hemagglutinating titer. During storage of the virus, a decrease of the infectious titer is observed, the more accentuated the less adapted is the strain. Strain SE, adapted to the allantoic fluid, was used for the preparation of an antigen for complement fixation.

The advantages obtained by isolation of the mumps virus from the cerebro-spinal fluid are shown, lending support to the theories that sustain the neurotropism of this virus.

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650.- ACAD.ST. S.NICOLAU, N.CAJAL, M.SEPERANU , GH.MARINESCU

The presence of specific elementary corpuscles in tears, mucus and impressions of Filatov-Koplick's enanthema in measles patients.

Works of the General Scientific Session of the R.P.R. Academy, June 2-22 1950, 1339.

Until 1950, the morphology of the measles virus had been very little studied and the results obtained were both uncertain and contradictory. The measles virus was revealed on mucus and tear smears and on the impressions of Filatov-Koplick's enanthema, stained with phenicated isamine. The virus appears in the form of coeciform elementary bodies, grouped in clusters, measuring approximately 120 mμ. The frequency of measles elementary particles is higher in the first hours after the onset of the disease, particularly in the mucus and tears, gradually decreasing after 48 hours.

651.- N.CONSTANTINESCU, M.DUCA, E.DUCA, A.VITA. Investigations on the transmission of the virus of german measles to rabbits and guinea pigs. Cultivation of the virus in embryonated eggs. St. cerc. inframicrobiol., microbiol., parazitol., 1952; 2. 3-4, 37.

The virus of German measles was revealed in the blood of patients by inoculation to rabbits and guinea pigs only in the first three days of the disease, never later. In the animals, a blood-leukopenia syndrome was induced with appearance of plasma-cells, accompanied sometimes by variable febrile reactions. The virus cultivated in ovo in the yolk sac gave rise in the rabbit to the same blood syndrome as the virus from the blood.

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652.- ST.DRAGANESCU, R.DINU, M.MARINESCU, M.SEPERANU-FIRICA, O.MITROIU. Nervous manifestations in measles. Anatomopathologic study of morbillious meningoencephalitis. St. cere. inframicrobiol., microbiol., parazitol., 1952, 2, 3-4, 119.

The cerebral localization is the most frequent nervous manifestation in the course of measles. Rumanian medical literature has not yet published a more important work on the histopathology of cerebral complications in measles.

The present paper describes the histopathologic aspects encountered in 15 cases of measles with lethal nervous manifestations.

The classical picture of demyelinating encephalomyelitis with glial proliferation was encountered in a single case. The other 14 cases were characterized by the presence of a serious meningo-encephalitis process of variable intensity; endo-thelitis with venous prevalence, blood stasis with leukocyte thrombus, vascular dilatation and distension of the perivascular spaces occupied by a serosity. These cases may be listed among the "supraacute toxic type" of measles described by Dagidlis.

653.- G.MARINESCU, P.STROESCU, N.ABRAHAM. Nervous manifestations in the course of measles. Clinical aspect. St. cere. inframicrobiol., microbiol., parazitol., 1952, 2, 3-4, 109.

Nervous accidents in the course of measles, seldom encountered, have been described in isolated cases in our country.

The clinical study of 31 cases with nervous complications out of a group of 2637 cases of measles, hospitalized in the children's wards for contagious diseases (Dr.A.Stroe), during the 1945-1951 period is presented. The average incidence of these accidents (1.15 per cent) is close to that found in poliomyelitis with slight annual differences ranging between 0.4 per cent in 1945-1950 and 2.19 per cent in 1951.

Nervous complications usually appear between the 3rd

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and the 7th day after the beginning of the exanthema.

According to the clinical form, there were: 20 cases of encephalitis, 9 meninge-encephalitis, 1 meninge-encephalomyelitis, 1 serous meningitis.

These neurologic manifestations were associated in over half of the cases, with other complications (interstitial or bacterial broncho-pneumonia, otitis, etc.).

The mortality rate in the cases with nervous complication was 46 per cent; association with pulmonary complication of a viral or bacterial nature increased it almost twofold (73.3 per cent.).

654.- ACAD.ST.S.NICOLAU, N.CONSTANTINESCU, A.TOMA. Anti-measles prophylaxis by active or passive local immunization of the portal of entry of the virus. St. cerc. infremicrobiol., microbiol., parazitol., 1952, 3. 3-4, 199.

Since the measles virus penetrates into the organism by the naso-pharyngeal route, an attempt has been made to block this portal of entry by active or passive immunization, with a view to preventing infection.

Active local immunization. The virus attenuated by convalescent serum, in a proportion of 1 volume virulent blood + 99 volumes serum (kept in contact during 1 hour at 37°C, then 2 hours at +4°C) was administered by nasal instillation to a group of 17 children without morbilli antecedents, among which a case of measles had appeared. In the following 30 days, no other case was reported.

Passive local immunization. Convalescent serum was instilled twice a day during 4 days (7 drops in each nostril) to a group of 12 children, aged 1-6 years, without measles in their antecedents, in a common hospital ward, in which a case of measles had appeared. In the following 30 days none of the children contracted the disease.

These preliminary researches make it possible to assert that in children's communities (hospitals, day-nurseries, pre-natorial etc.), measles can be prevented by active or passive immunization of the naso-pharyngeal mucosa, the portal of entry of the measles virus into the organism.

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655.- M.VOICULESCU, N.NICOLICU, B.DAN, G.MARINESCU. Interstitial pneumonia in measles. St. cerc., pediatrie 1955, 2, 180.

A clinico-radiologic study was carried out in the course of a year (1950-1951) on a number of 394 measles patients. Pulmonary modifications were found in 42.6 per cent of the cases. Of these, almost half showed radiologic interstitial processes, a quarter mixed processes and almost a quarter simple broncho-pneumonia or pulmonary tuberculosis.

The pulmonary modifications were also studied under the microscope in 10 lethal cases.

The interstitial processes seem to be due to the measles virus; these are the cause of the severity of measles in infants, in which the interstitial lesions are exceptionally intense and spread to both lungs, giving rise to extremely severe respiratory difficulties that end in death by anoxia.

In view of the severity of these pulmonary interstitial lesions in infants and the resistance to antibiotics, a very complex therapy is necessary, in which symptomatic, stimulant and bio-therapeutic treatment should be applied, besides antibiotics. The severity of the anoxia interstitial processes is an additional reason for establishing compulsory prophylaxis of measles in infants.

656.- G.MARINESCU. Anatomo-clinical forms of encephalitis in the course of measles. (31 nervous complications, 15 microscopic examinations). Third Congress of clinical biology, Bruxelles, July 14-20, 1957.

Nervous complications were observed in 31 (1.17 per cent) of 2,367 cases of measles, admitted to hospital. These complications usually appeared in the first days of the eruption. Clinical signs of encephalitis or prevalently encephalitic signs were the most frequently encountered (20 cases); meningo-encephalitis was noted in 9 patients; meningo-encephalomyelitis in one patient and serous meningitis in one patient.

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The age-group most frequently affected was first and second childhood.

In nervous complications, the mortality rate was 46 per cent; it was much greater when nervous modifications were associated to other complications, particularly broncho-pulmonary complications.

Microscopic examination was performed in 15 cases. The clinical aspect of the nervous complications is fairly varied, whereas the histopathologic aspect is formed of 2 totally different pictures: one, more seldom encountered, of classical meningo-encephalitis with glial proliferation and perivascular demyelination, characterized from the clinical view-point by the prevalence of the somnolence - paresis - coma syndrome due to an allergic pathogeny, and the other, more frequently encountered, of serous meningo-encephalitis with vascular endothelial reactions and parenchymatous degenerescence, characterized from the clinical view-point by the frequent prevalence of the convulsive hyperthermic syndrome, due to a toxic pathogeny.

657.- G. MARINESCU - Myocarditis in the course of measles. (Anatomopathologic study.) Bull. l'Acad. Nat. Med., 1958, 142, 9-10, 232.

The presence of myocarditis in the course of measles in 21 per cent of the cases is reported.

The vascular effect of the measles virus, the influence of bacterial or interstitial broncho-pneumonia or pneumonia, the role of the nervous system, of toxic-infectious antecedents and of morbid associations may interfere in the pathogenic mechanisms of cardiac lesions.

Cardiac alterations, especially of a circulatory order, stand at the basis of the clinical and especially of the electro-cardiographic signs, well known in measles.

658.- I. AMERZA. Recent investigations on the measles virus.
Microbiol., parazitol., epidemiol., 1959, 4, 6, 481.

A general review of the most important data obtained by different authors. Stress is laid on the possibility of cultivating the measles virus in tissue cultures and the particularities of cultivation in various cells.

A description is given of the most recent methods that can be applied for the diagnosis of measles, especially serologic tests.

659.- M. VOICULESCU, G. MARINESCU. Infectious lymphocytosis, contributions to the clinical picture; the onset of encephalitis in the disease. Rev. St. Med., 1951, 4, 52.

Three cases of acute infectious lymphocytosis, which began with encephalitic phenomena are described. Stress is laid on the unusual but very brief description of disease, is given, mentioning the various affections which should be taken into account in the differential diagnosis of infectious lymphocytosis.

660.- C. CONSRANTINESCU, G. MARINESCU, C. PALADE. Infectious mononucleosis in infants. Pediatria, 1953, 4, 43.

A study is carried out on the first cases of infectious mononucleosis, observed in our country (1949), in infants aged 1-1 1/2 months.

The clinical particularities observed were: fever and moderate adenopathies, erythematous angina with manifest oculonasal catarrh, hile-pulmonary infiltrations (interstitial or mixed).

Henatologic particularities consisted in: eosinophilia (blood and medullar) and a moderate anemia, linked to a characteristic leukocyte count (typical and atypical mononucleosis).

Heterophil antibodies (Hängănuiiu test) are present in low titers; biopsy of the ganglia showed reticulo-endothelial and lymphocyte hyperplasia, as well as the presence of eosinophilia, the picture recalling malignant lymphogranulomatosis, in which however the Sternberg cells especially are missing.

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661.- M. MINCULESCU, N. CAJAL, GH. MARINESCU, G. BOTEZ, E. LISSIEVICI, I. KOS. Clinical and experimental investigations in acute infectious lymphocytosis in children. St. cerc. Pediatrie, 1955, 2, 236.

A clinical, epidemiologic, experimental and histopathologic study was carried out on 6 cases of infectious lymphocytosis in 2-5 year children from a day-nursery and children's home and 1 adult, the mother of one of the children. The clinical symptomatology was not characteristic: two of the children showed signs of dysenteriform enterocolitis, the other four cases were detected by systematic examination (considerable leukocytosis with accentuated lymphocytosis). Incubation ranged between 5-24 days and the disease lasted between 25-35 days, with a contagiousness of 25 %.

The hemagglutination and hemagglutination-inhibition reaction, using as antigen a feces filtrate from the children and the serum of patients or convalescents, was positive in fairly high titers. The causal agent seems to be of viral nature as it can be detected by the hemagglutination and hemagglutination inhibition test. The virus is eliminated by intestinal route. Negative results were obtained following inoculation to rabbits, guinea pigs and mice. Following intravenous inoculation to hens of the blood of patients, hyperleukocytosis without modification of the leukocyte count appeared in one third of the birds. Hemagglutination-inhibition with the feces of hens as antigen was positive with the sera of lymphocytosis convalescents and negative with normal sera. The morphopathologic substrate of the clinical signs in birds resides in the intense processes of lymphocyte meningoencephalitis. Certain encephalitic signs in human pathology may have the same mechanism.

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662.- G.MARINESCU. Acute infectious lymphocytosis. Probleme de inframicrobiologie, Ed. Med. Buc., 1956, 214.

On the basis of his personal experience, as well as on the basis of the first Rumanian publication regarding infectious lymphocytosis and the description in literature of the first cases of encephalitic onset of the disease, the author describes our present knowledge, of this new disease, making use of the rich bibliographic and illustrative documentation.

663.- G.MARINESCU, E.SPRINCENATU-DOCEA. Some aspects of infectious mononucleosis in children. Report read at the session of the Institute of Inframicrobiology of the R.P.R. Academy, 5 March 1956.

The clinical, hematologic and serologic study of 60 cases of infectious mononucleosis revealed a variety of clinical forms in children of various ages.

A granulocyte form illustrated by a case confirmed by the Hăngănuțiu reaction and its subsequent clinical evolution (conversion of the formula with percentile increase of atypical mononuclears) is described.

664.- D.SARATEANU. Infectious mononucleosis. Probleme de Inframicrobiologie, Ed. Med., 1956, 184.

The problem of mononucleosis is dealt with, particular stress being laid on experimentation, the anatomo-pathologic aspect, diagnosis and therapeutical methods.

665.- D.SARATEANU. Serological diagnosis of infectious mononucleosis. Rev. Microbiol., parazitol., epidemiol., 1959 2, 175.

The current modern techniques employed for the serologic diagnosis of mononucleosis and the way in which the results must be interpreted are described.

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- 666.- A.DEREVICI, R.PORTOCALA, PETRA VASILESCU. Investigations on polyhedrosis (jaundice) of the silkworm (Bombyx mori). An. Acad.R.P.R. Sect. St. Med. 1950, 2, mem. 23, 713.

A history of the problem of silkworm polyhedrosis is dealt with in this monograph, stressing the exo- and endogenic factors that cause the disease.

Numerous data are contributed to the properties of the polyhedral virus, its morphology, structure, multiplication, hematic modifications, immunity and laboratory diagnosis. The results obtained in investigations on sterilization of Bombyx mori eggs against the polyhedral virus are described. The role of exogenic factors on the resistance of various breeds of silkworms to this viral disease is likewise examined.

~~Additional~~ study of polyhedrogenesis is carried out both in the tissues and blood. Cytochemical stainings helped to obtain a deeper understanding of the phenomena.

Negative results were obtained in the attempts made at cultivation on the chorio-allantoic membrane and diagnosis of the disease by the Hirst test. Mention is made of the toxic action of the neocide on the nervous system of the larvae and the development of resistance to the viral disease in the surviving larvae.

- 667.- A.DEREVICI, E.SORU, H.VAINER. Chromatographic study of virus of the amino-acid components of the silkworm polyhedrosis virus. Comunicările Acad.R.P.R. 1951, 2, 9-10, 645.

By means of the chromatographic method, a study was carried out on the amino-acids of the silkworm polyhedrosis virus, submitted to acid and then to alkaline hydrolysis. Uni- and bidimensional chromatography, as well as electrochromatography were performed.

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The presence of 17 amino-acids was established:

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|------------------|------------------|-------------------|
| 1) cystine | 7) serine | 13) methionine |
| 2) ornithine | 8) glycocole | 14) phenylalanine |
| 3) aspartic acid | 9) glutamic acid | 15) leucine |
| 4) arginine | 10) alanine | 16) isoleucine |
| 5) histidine | 11) proline | 17) tryptophan |
| 6) lysine | 12) tyrosine | |

668.- N.CAJAL, P.VASILESCU. Study of the megamononuclear blood syndrome induced by diphtheria intoxication.
Bull.St. Acad.R.P.R. Sect.St.Med. 1949, 1, 3, 317.

Study of the leukocyte count in diphtheria patients in various phases of the disease, showed the presence of a megamononuclear blood syndrome, described by S.Nicelau as an echo of the intoxication, in the peripheral blood. Blood megamononucleosis, present in all the cases studied, constituted an early and lasting element, being encountered from the first hours of the disease and persisting for a long time during convalescence.

By the study of megamononucleosis, a swift differential diagnosis can be made between simple anginas and diphtheria.

~~669.-~~ ACAD.ST. S. NICELAU. Intoxications detected by the study of megamononucleosis. Acad.R.P.R., Sect.St.Med. 1949, 1, mem. 1, 1.

A leukocyte reaction appears in the peripheral blood of man and animals suffering from intoxications, characterized by multiplication of monocytes, and appearance of primordial Rieder and Tuzek cells.

This reaction, which was named by the authors "megamononucleosis", represents one of the means of defence of the organism against intoxications.

In cannon burns, as well as in those caused by certain chemical agents, blood mononucleosis indicates the state of intoxication.

Certain experimental intoxications with cobra poison,

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hydrargyri cyanidum, septic vibrio toxin, chloralose, morphine, tuberculin and experimental toxoplasmosis always cause the appearance of megamononucleosis.

In the wounded, during the post-operative disease, as well as in persons suffering from sun-burn, megamononucleosis indicates the degree of intoxication of the organism, caused by resorption of degraded albumins. In infantile toxicosis, this blood picture, whose value attains 38.5 per cent, constantly appears.

Megamononucleosis exists in all cases of diphtheria and is absent in common angina, which moreover allows for a rapid differential diagnosis.

Finally, occupational intoxications can be revealed by means of this hematologic test. The study of 230 blood tests from the workmen from 4 factories and a printing house showed a marked parallelism between the intensity of this blood syndrome and the degree of intoxication.

Therefore, this blood picture, megamononucleosis, is constantly revealed in occupational intoxications; its diagnostic value is similar to that represented by polynucleosis in acute microbial infections, by eosinophilia in helminthic infections and by lymphocytosis in certain chronic infections.

670.- ACAD. ST. S. NICOLAU, N. CAJAL, S. MATEESCU. Study of megamononucleosis for the detection of occupational intoxications. Medicina Rom., 1949, 4, 9, 439.

Examination of the blood of 230 workmen from 4 factories and a printing house, showed that the study of megamononucleosis can reveal the state of intoxication of the organism in workmen from enterprises, in which toxic substances are handled or in which toxic vapours emanate during working hours.

A marked parallelism is observed between the intensity of the blood syndrome and the degree of intoxication of certain workmen whose blood was examined.

In view of the fact that megamononucleosis faithfully reflects the state of intoxication, that its sensitivity - resen-

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ling that of a " true " reagent - preceeds by far the clinical symptomatology in occupational toxicosis, it is proposed that this extremely simple examination of the blood should be performed in all the enterprises in which megamononucleosis, the alarm signal of intoxications, might detect an hour sooner the possible state of intoxication of the workmen.

671.-R.PORTOCALA, N.CAJAL. On the monocytogenetic activity of lyzed tuberculosis bacilli, injected to rabbits by intravenous route; study of the nature of this monocytogenesis. An.Acad.R.P.R. St.Med. 1949, 1, men.6, 137.

The introduction of tuberculin dilutions in the blood flow of rabbits induces the appearance, already in the first 24 hours, of a megamononuclear syndrome, characterized by a high increase in the number of monocytes, as well as by the presence of some abnormal elements (Rieder, Turek and primordial cells) in the peripheral blood of the animals.

Decrease in the proportion of these leukocytes is fairly sudden; it begins 48 hours after the injection and returns to normal in an interval of time that does not exceed 8 days.

Administration by intravenous route of tuberculin, even in a 1/200,000 dilution, can still induce the syndrome.

Modifications of the blood picture that appear following introduction of tuberculin into the veins of rabbits lead to the assumption that a passagery irritation of the reticulo-endothelial system in general, and of the vascular endothelium in particular, must be incriminated as the cause of the phenomenon. This phenomenon swiftly disappears following elimination of the irritating substance.

672.- ACAD.ST.S.NICOLAU, R.PORTOCALA, A.DEREVICI, C.SURDAN, N.CAJAL. Intravascular reaction to tuberculin in cattle, interpreted in terms of blood megamononucleosis.

Vol. 1, Gen. St. Acad. R. P. R. 1950, 1001.

The experimental results obtained during the investigations which form the subject matter of the present paper, show that injection of a single 10 ccm dose of 1/50 diluted tuberculin by intravenous route, induces an intense and swift

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megamononuclear syndrome in cows with tuberculous lesions. The same amount of tuberculin, administered in the same way to healthy cows, factually remains without results.

It is proposed that this procedure, which can be employed to detect tuberculous cows, should be called intravascular reaction to tuberculin by analogy with intradermoreaction.

673.- ACAD.ST.S.NICOLAU, A.DEREVICI, S.MATEESCU. Occupational intoxications detected by means of megamononucleosis (field-surveys in industrial regions). Bul.St.Acad.R.P.R. Sect.St.Med. 1950, 2, 9, 1161.

For an early diagnosis of lead poisoning or other intoxications, the authors propose to apply the Nicolau test, which consists in determining the percentage of megamononuclears in the blood count.

Investigations carried out on 297 samples taken from workmen from the sections processing lead ore showed mononucleosis in more than 8 %, sometimes even attaining 28 % of the subjects; 69 % of the workmen in chemical industries and 66 % of chauffeurs working in garages.

The simplicity of the test makes it useful for the detection of the early forms of intoxications.

674.- ACAD.ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. Megamononuclear syndrome caused by solar erythema. Rev.St.Med. 1950, 1, 23.

Study of the leukocyte count in subjects with more or less accentuated states of intoxication due to sunburn, showed: a typical megamononuclear picture in the peripheral blood (increase in the number of monocytes, the appearance of Türk, Rieder, juvenile non-differentiated and primordial cells). The values of mononucleose oscillated between 12 and 20 elements per cent in the cases with pronounced erythema.

In all cases with severe, wide-spread burns, with phlyctenae, headache, nausea, megamononuclear values ranged between 22 and 32 per cent.

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In all the cases, megamononucleosis appeared at an early date, already during the first 48 hours. Its intensity ran parallel with the intensity of the lesions. Another characteristic of this blood syndrome, was its duration; in severe forms, there was pronounced megamononucleosis in the peripheral blood, even after 15 days.

These findings lend support to the assumption that megamononucleosis represents the blood reflex of intoxications of the organism, irrespective of their cause.

675.- R.PORTOCALA, N.CAJAL. On the toxic activity of tuberculin injected to rabbits by intramuscular route; study of the subsequent megamononuclear syndrome. Bul.St.Med.Acad. R.P.R. 1950, 2, 127.

In order to investigate if tuberculin can induce in rabbits a true megamononuclear syndrome, which reflects intoxication of the animal's body by involvement of the reticulo-endothelial system, a single injection by intramuscular route of successive tuberculin dilutions was administered to a group of rabbits.

A study of the leukocyte count of these animals showed, already after 24 hours, an increase in the number of monocytes and the appearance of other elements that constitute the megamononuclear syndrome (rârek, Rieder and primordial cells).

The megamononuclear curve continued to increase in the following days, staying level for a long time, in the average 20 days. The appearance of these megamononuclear elements in the blood flow, the early onset and duration of this syndrome reflect a state of intoxication of the organism, due to a toxic substance that is represented by tuberculin in these experiments.

676.- D.SARATEANU. Megamononucleosis in experimental diphtheria. Bul. St.Acad.R.P.R. Sect.St.Med. 1950, 2, 9, 1173.

The constant presence of the megamononuclear syndrome, revealed for the first time by St.S.Nicolau, was observed in

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the peripheral blood of animals submitted to diphtheria intoxication.

The reaction appears early, in the first six hours, is lasting, being observed also 270 hours after inoculation of the toxin and being directly proportional to the intensity of the intoxication.

Average mononucleosis values after 24 hours are 4 times higher than the normal (individual values 21 %, 23 %, 25 %, 27 %), and after 270 hours twofold normal values (9 %).

677.- ACAD.ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. Study of the influence of certain hormones on the incidence of Kurloff's bodies in the peripheral blood of guinea pigs.
Bul.St. Acad.R.P.R. Sect.St.Med. 1949, 1, 2, 111.

A series of experiments were carried out with a view to studying the influence of certain hormones (foliculin, testosterone, lutein, cortico-suprarenal extract, adrenalin, glandutrin and reticulim) on the evolution of the proportion of Kurloff's bodies in the peripheral blood of adult guinea pigs.

At the same time, a study carried out on a group of pregnant guinea pigs made it possible to investigate the numeric evolution of Kurloff's bodies in the course of pregnancy. Another group of 5 day old guinea pigs, which had no Kurloff's bodies in the peripheral blood at the microscopic examination, was employed for the study of the eventual factors that influence the appearance of these formations.

The data obtained lead to the conclusion that foliculin, testosterone, cortico-suprarenal extract, adrenalin, the retrohypophyseal hormone and reticulim exercise no effect, in the above mentioned experimental conditions, on the evolution of the percentage and morphology of Kurloff's bodies in the peripheral blood of guinea pigs.

Foliculin administered to 5 day old guinea pigs, did not induce the appearance of Kurloff's bodies in the peripheral blood before the usual term, i.e. 21 days. Administration of

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lutein, however, brought about the appearance of a large number of Kurloff's bodies in the peripheral blood of these animals. The percentages observed following administration of this hormone, may sometimes exceed fivefold the initial value of these formations.

During pregnancy, an increase of Kurloff's bodies was observed, the ratio sometimes exceeding 11 formations per 100 leukocytes, a state which is prolonged also during the period of lactation.

678.- ACAD.ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. The action of some enzymes on Kurloff's bodies. Bul. St.Acad.R.P.R. Sect. St.Med. 1949, 1, 3, 313.

With a view to finding a new argument in favour of the protein constitution of Kurloff's bodies, a study was carried out on the effect exercised by papaiotin, pepsin, trypsin and pancreatin on these formations.

The result of these investigations showed that papaiotin completely digests Kurloff's bodies, pepsin and trypsin have an incomplete action and pancreatin has no effect at all.

These experiments plead in favour of the protein constitution of Kurloff's bodies.

679.- ACAD.ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. Cyto-chemical investigations on Kurloff's bodies. Bul.St.Acad.R.P.R. Sect. Med. 1949, 1, 3, 19.

The cyto-chemical investigation carried out in order to detect the presence of deoxyribonucleic and ribonucleic acid in Kurloff's bodies made it possible to assert that these formations do not contain deoxyribonucleic acid detectable by the Feulgen reaction.

On the other hand, by means of methyl-pyronin green staining, combined with the action of ribonuclease, ribonucleic acid was revealed in Kurloff's bodies on non-fixed smears.

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680.- ACAD.ST.S.NICOLAU, R.PORTOCALA, N.CAJAL. Investigations on the chemical constitution of Kurloff's bodies. Conference of Normal and Pathologic Morphology, Buc.June 1949.

The results of the cytochemical investigation carried out with a view to supplying data in the problem of the chemical constitution of Kurloff's bodies, made it possible to conclude that these formations do not contain peroxidase, lecithin, cholesteroline, iron or potassium; the Feulgen-Voit plasma reaction was likewise negative, indicating the absence of compounds with aldehyde functions.

The cytochemical tests performed for revealing proteins on the smears of non-fixed blood, as well as the treatment of these smears by various proteolytic enzymes showed that Kurloff's bodies possess in their constitution a large amount of protein substances. The tests employed did not make it possible to identify the protein that is to be found in these formations.

Negative results were always obtained in the Feulgen reaction for the detection of deoxyribonucleic acid, which rules out the hypothesis of the nuclear origin of Kurloff's bodies.

The presence of ribonucleic acid in Kurloff's bodies was demonstrated by methyl-green and pyronin staining, combined with the action of ribonuclease. It was noted that Helly fixed smears are not indicated in the study of ribonucleic acid in Kurloff's bodies, as ribonuclease does not act upon the formations fixed in this way. On the non-fixed smears, however, the enzyme can exercise an effect by eliminating the corresponding acid from the formations studied.

These experimental data show that the formations described by Kurloff have in their chemical constitution a protein, probably combined with ribonucleic acid.

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681.- A.DEREVICI, D.SARATEANU, G.KAHANE, M.GRUIA. A laboratory method for the diagnosis of pellagra. St. cerc. infra-microbiol., microbiol., parazitol., 1951, 2, 1-4, 151.

For the diagnosis of pellagra, a precipitation test is proposed, in which an aqueous extract prepared from the clot-
ted blood withdrawn from pellagra patients during the acute
phase is used as antigen.

The pieced clot is triturated with ethylic alcohol in
a proportion of 30 % of the volume, and is maintained at 37°C
in thin layers, in a Petri dish; after evaporation of the al-
cohol, the powder remaining in the mortar is triturated and
an extemporaneous 10 % extract is prepared with saline.

The precipitation reaction is performed according to the
known procedures, with the sera of pellagra patients, obtai-
ning positive results in 100 % of the cases, when the blood
is withdrawn in the month of June, in 79.9 % of the cases
when the blood is withdrawn in the month of May and 30.6 % in
the month of April.

These reactions were negative in the controls (the
same procedure performed with blood taken in the non-pella-
gra regions and from persons without clinical manifestations
of diagnosed pellagra).

This reaction, readily performed, can be used for the
serologic diagnosis of pellagra.

682.- A.DEREVICI, D.SARATEANU, A.BRONITKI, M.GRUIA, R.IONA-
SESCU, C.ALBU. Experimental therapy in pellagra. St.
cerc.inframicrobiol., microbiol., parazitol., 1953, 4
1-2, 51.

A therapy addressed to the general reactivity of the or-
ganism was attempted in the treatment of pellagra. This tissu-
lar therapy, according to the method of Filatov, was applied
to various groups of patients, either in the form of bread
yeast, nicotinic acid or placenta tissular extract prepared
according to the technique of I.Milcu.

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The treatment with bread yeast was soon abandoned, as it was supported by the patients with difficulty. The symptoms of the disease rapidly disappeared in 47.36% of the patients treated with nicotinic acid and in 65.25 % of the patients treated with Milcu tissular extract, a figure which indicates the superiority of the latter product.

683.- A.DEREVICI, D.SARATEANU, AL.BRONITKI, M.GRUIA, AL.PETRES-CU. The role of psychical trauma as adjuvant factor in the onset of pellagra. St. cerc. inframicrobiol., microbiol., parazitol., 1953, 4, 1-2, 59.

The role of psychical traumas in the outbreak of the symptomatology of certain diseases is well known.

The statistical study of psychical traumas in the antecedents of pellagra patients showed the presence of the latter in 63.19 % of the cases. No psychical shock existed in 25.27 % and in 11.52 % the symptomatology was doubtful.

684.- G.BAIMUS, A.BULLAI, V.BUTTE. Investigations on experimental diabetes due to alloxane in rabbits. Bul. St.Acad. R.P.R. Sect. St. Med., 1950, 2, 6, 625.

Permanent diabetes can be obtained in rabbits by injections of alloxan, not only in large doses, but also in medium doses of 100 mg/kg body weight. Certain animals with diabetes sometimes return to normal; investigations have shown however that these animals suffer from a significant disorder of sugar metabolism, which is revealed by means of the glucose induced by hyperglycemia test.

The phase of initial hyperglycemia after the alloxan injection is much longer - 4 or more hours - than shown by other investigators (1-2 hours); it varies in terms of the doses administered.

A permanent alloxan diabetes has not a severe prognosis in rabbits, as denutrition is slight in this animal and administration of insulin does not seem useful.

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685.- G.BALMUS, M.SEPEANU, A.BALLAI. Considerations on histopathologic modifications in alloxan-induced experimental diabetes in rabbits. Bul. St. Acad. R.P.R. Sect. St.Med., 1951, 3, 1, 37.

The histopathologic lesions observed in animals submitted to two experiments with alloxan are described.

The histopathologic modifications in alloxan - induced experimental diabetes vary according to the susceptibility of the animal to this organic compound; as a rule, the most important necrotic lesions, coagulation and vacuolar degeneration, are to be found in the Langerhans islets, the more intense the closer to the moment of alloxan administration. Moreover, it was found that both the beta and alpha cells are involved in the degenerative process.

In opposition to the data of other investigators, important degenerative lesions are described in the other organs: liver, suprarenal capsules and pituitary gland, of variable intensity according to the evolution of the disease; no fatty degeneration lesions were observed on the liver sections.

686.- G.BALMUS, A.VATASESCU. Modification of the figurative elements of the blood in the course of alloxan intoxication in the rabbit. An.d'Endocrinologie 1958, 19, 1, 50 .

Alloxan introduced by intravenous route into the rabbit in 100 - 200 mg doses per kg body weight causes a biphasic glycemic curve in the course of 24 hours :

- a) a hyperglycemic phase,
- b) a hypoglycemic phase and
- c) a third lasting hyperglycemic phase.

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Study of the figurative elements of the blood in these animals during the first 24 hours of intoxication showed: hypoglobulia and thrombocytopenia in the first 4 hours, the latter showing a marked ascension; a slow and lasting hyperleukocytosis; granulocytophilia with lymphopenia, with a peak in the 8-th hour; no change in monocytes.

Modification of the figurative elements of the blood are closely linked to the process of hyperglycogenesis, caused by alloxan and temporarily by insulin.

These results fully confirm the same investigations carried out on the normal or diabetic organism, submitted to the biologic induced hypoglycemia test after administration of 12 U insulin by intravenous route.

687.- A.DEREVICI. Contributions to the study of experimental goitre. Bul. St. Acad. R.P.R. Sect. Med. 1949, I, 6, 535.

Investigations were carried out on goitre - genesis in rabbits applying, for the assessment of results, the Rowland and Parkes ponderal test in which the thyrotrophic unit is the amount of hormone capable of doubling the weight of the thyroid; this is then calculated in terms of kilogram - body weight.

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Milcu's cytologic test, measuring the diameter of the follicular cells and follicles, was likewise applied. The thyroid gland of rabbits fed on cabbage shows an increase in weight of almost 100 % in comparison with the control animals, and increase in the diameter of the follicles of more than 50%, a diminution of follicle colloid and increase of the Golgi reticular apparatus, intensification of vascularization, chromophobia, fluidification and decrease in the amount of colloid.

688.- A.DEREVICI. Contributions to the study of zoo-endocrinology. Research in the field of hormones in invertebrates. Lepidoptera: Bombyx Mori. Recueil d'Etudes médicales. Bucarest 1949, 354 pages.

In view of establishing the influence of certain glandular extracts on the metamorphosis of some invertebrates, experiments were carried out on the silkworm with the following hormone extracts: thyroid, thymus, testicular, ovarian, pineal, cortice-suprarenal and insulin.

The stages of larval and adult life of the silkworms fed on leaves soaked in various extracts did not differ from those of the controls. It was likewise noticed that drying of mulberry-leaves after having been dipped in hormonal extracts or only in drinking water diminishes their nutritive value, a fact established by a group of control silkworms fed on fresh mulberry-leaves. A group fed on mulberry-leaves treated with insulin increased in weight, both in the larval and cocoon stage, as compared to controls fed on dried leaves, after being dipped in drinking water.

689.- ACAD. ST. S. NICOLAU, B. FLORIAN, M. BABES. The philosophy of Victor Babes, the scientist. " Studii ", 1950, 2, 47.

The present paper deals with an article published by Victor Babes in the " Revista Stiintifică Română " (Rumanian Scientific Review) in 1879, from which the materialist convictions of the Rumanian scientist may be seen.

The title of the article is " Relations between natural

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sciences and philosophy " and the author, analysing human thought, reaches the conclusion that the brain must not be confounded with thought (conscience), and that our scientific knowledge of the brain does not justify the inclusion of conscience in the field of natural sciences. By the study of this article to-day, the authors open up prospects for considering Victor Babeş from a new angle, that of the history of materialist philosophy in our country, thus situating the man of science among the first materialist thinking intellectuals of the Rumanian people.

690.- ACAD.ST.S.NICOLAU, N.CAJAL. Inapparent, enzootic disease in rabbits due to an unknown germ, Bul. St. Acad.R.P.R., Sect. St. Med. 1950, 2, 4, 305.

A study of lung sections from 100 rabbits, 57 of which inoculated with various viruses and 43 non-inoculated, " normal " rabbits, revealed in 45 cases (normal or previously inoculated animals) the presence of chronic lesions characterized by lymph nodules and perivascularitis processes, with mononuclears. The most interesting lesions were encountered at the level of the bronchioli or around the blood vessels.

It was not possible to detect nuclear inclusions or visible micro-organisms in any of the sections.

The animals with these lesions behaved perfectly normally, not presenting any morbid symptom.

Study of chronic pulmonary lesions in a group of rabbits in which the leukocyte count had been performed, showed a certain parallelism between the presence of these lesions and the existence of mononucleosis, particularly lymphocytosis.

These data gave rise to the question if a certain relationship does not exist between blood lymphocytosis and pulmonary lesions.

The growth of these lesions, proof of the inapparent disease, eliminates any errors of interpretation in the course of experiments on rabbits.

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091.- ACAD.ST.S.NICOLAU, A.STROE. Histo-pathologic modifications of the skin in infantile sueta miliaria: cytoplasmic inclusions characterizing the lesions. An.Acad.R.P.R. Sect.St.Med. 1950, 2, no.7, 145.

In infantile Sueta miliaria, the skin lesions begin in the derm and then extend to Malpighi's layer. Phenomena of degeneration of the epithelium appear, accompanied by a massive infiltration of leukocytes, particularly polynuclears. Micro-vesicules are formed and sometimes intra-epithelial micro-pustles: these become confluent and constitute the eruptive element which destroys the cornuous epithelial layer that separates it from the exterior.

In the skin lesion due to the virus of infantile Sueta miliaria, cytoplasmic inclusions are to be found in the epithelial cells. Viral colonies or "pre-inclusion" stages (probably more or less degenerated, agglutinated germs) may exist in the Malpighi layer and in the infiltration leukocytes, particularly in the large mononuclear cells. The latter intraproteoplasmic formations may also be found in the infiltration cells in the derm.

The ensemble of the lesions induced in the skin by the Sueta virus - because only a virus can produce such inclusions - differs from the changes produced in the skin by the vaccinia, herpes zoster, small pox or herpes viruses.

092.- ACAD.ST.S.NICOLAU, S.MATEESCU. Economic use of food for experimental animals. Rev. St. Med., 1951, January, 60.

In the food of laboratory animals oats are one of the basic elements. It is known that at least 50 % of the grains given to animals is scattered, mixed with the dejections and thrown away.

It is proposed to form a paste with the grains, giving it a rod-like shape, which is dessicated and then cut into small pieces and given to the animals. The animals can gnaw this food up to the last bit.

The authors propose to include into this paste crushed and whole oat grains, wheat bran and water.

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693.- N. CAJAL, S. MATEESCU, E. LISSIEVICI, D. SARATEANU. Etiologic investigations in epidemic toxicosis in infants.
(Epidemic diarrhea of the new-born infant). St. cerc. inframicrobiol., microbiol., parazitol., 1952, 3, 3-4, 475.

Investigations carried out in 22 cases of epidemic toxicosis in infants (epidemic diarrhea of the new-born infant) demonstrated the presence of the influenza virus type A in naso-pharyngeal washings (7 cases) and the faeces (8 cases). It was possible to isolate the virus from 9 cases in mice and type it as belonging to virus APR/8.

The isolated virus had a titer of 1/300,000, was maintained 28 days in glycerine in the ice-box; it was pathogenic for mice by intranasal and peritoneal inoculation. It conferred to the animals surviving infection a state of resistance of about 21 days. The possibility of cage-contagion for mice, as well as a case of human laboratory infection in the course of the first passages on animals are shown.

In view of the results obtained, the role of the influenza virus in the etiology of infantile toxicosis, alone or particularly following the influence and modification of the aggressivity of certain temporarily pathogenic microbial germs, in the digestive tract, is sustained.

694.- ACAD. ST. S. NICOLAU, G. BALUS, G. MARINESCU, D. SARATEANU. Investigations on the action of 2-3 dithiocaptanopanol compound in experimental lead poisoning in rabbits.
 Bul. St. Acad. R. P. R., Sect. St. Med. 1952, 4, 2, 481.

A description is given of the circulation, fixation and elimination of certain lead salts, as well as the intimate mechanism of action of dithiolic compounds in intoxications with heavy metal salts. The results obtained with "dicaptol" in various stages of lead poisoning (Pb carbonate) in rabbits are reported. This product exercised only a slight effect in cases of massive intoxication, a medium effect in cases of severe or prolonged intoxication and a favourable effect when the intoxication was slight and limited, but sufficient to cause the

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death of the control animals. Dicaptol was administered by intramuscular route in 1-3 injections per day in 5 mg doses per kg body weight.

Study of granulo-basocytes showed the appearance of the latter from the 2nd to 10th day; their disappearance from the peripheral blood pointed to a severe prognosis in the untreated rabbits and a favourable one in the treated animals.

The hematologic response, of the megamononucleosis type, was positive; the percentage of megamononuclear elements ranged between 5 - 23,5 % in 4 animals and between 2-11 % in 2 other animals.

695.- A.DEREVIČI, A.CRETESCU, D.SARATEANU, AL.BRONITKI, AL. PETRESCU. A transportable apparatus for the study of higher nervous activity in man according to the Ivanov-Smolenski method. St. cerc. inframicrobiol., microbiol., parazitol, 1953, 4, 3-4, 389.

In order to establish the slightest modifications induced in the higher nervous activity by infectious agents, a study is carried out on conditioned reflexes, by means of the Ivanov-Smolenski method, which investigates the interaction of the first and second signalization systems.

To this end, the authors built a transportable Ivanov-Smolenski apparatus with a control pannel, signalizer and recording system in the same case.

The small size of the apparatus (51 cm/31 cm/18 cm) makes it readily transportable to the bed of the patients, who need not be disturbed any more. The modifications are recorded graphically, a fact which constitutes an additional advantage to those listed above.

696.- M.BABES, S.IZSAK. Contribution of Victor Babes to the control of the 1913 cholera epidemic. Report read at the session of the Institute of Inframicrobiology of the R.P.R. Academy. January 22-24, 1954.

The present paper deals with the contribution of Vic-

ter Babeş to the control of the 1913 cholera epidemic, both in Bulgaria and in our country, in spite of the obstructions raised by the ruling class of those times.

The innovations and discoveries made by Babeş on this occasion are described in their ensemble. These led to the development of the " Rumanian method ", according to his own expression, of combating cholera in the laboratory and in the field.

To conclude the authors show the reasons which determined the ruling classes at the beginning of the 20 th century to despise the advice of true scientists on the effective control of epidemics.

697.- G. MARINESCU. Cases of Mediteranean fever in children.
Pediatria, 1955, 2, 42.

The first cases of Mediteranean fever among children reported in our country, are described.

The clinical picture of Mediteranean fever in children is much more benign than in the adult; fever is usually of short duration (less than 10 days) and the eruption takes on a more discrete papillo-nodular aspect.

Although children are more often in contact with tick-bearing dogs, the incidence of Mediteranean fever at this age is much lower, either due to subclinical forms, which can pass unobserved, or to confusion with other diseases with a similar eruption (toxi-infectious erythema, polymorphous erythema, erythema nodosum, food or medicinal eruption, - particularly due to sulphonamides, measles, rubeola, typhus fever).

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698.- G.BALNEU, G.MARINESCU, E.NASTAC. Results obtained with sodium tetrathionate in experimental lead poisoning.
Bul., St. Acad.R.P.R. Sect.St.Med. 1956, 8, 4, 937.

The favourable effect of certain sulphur compounds in poisoning with heavy metals led to determination of the efficacy of sodium tetrathionate in experimental lead poisoning in the rabbit.

The various groups of rabbits were intoxicated by gastric tube or directly in the food with CO_3Pb , the aqueous solution of tetrathionate (3%, 5%, 8% and 10%) was administered by subcutaneous or intravenous route.

As a rule, in moderate poisoning, the treated animals survived in a three times greater proportion than the untreated animals; in the severe form, tetrathionate had no effect.

The authors conclude that administration of sodium tetrathionate is indicated in human lead poisoning, particularly as in man this toxicosis is less intense than in the experimental animal.

699.- N.CAJAL, M.PASCU. Conjunctival viral infections. Lucrările celei de a II-a Ses.st.I.M.F. Bucuresti, 13-15 April. 1956, 455.

An ample report is presented on conjunctival viral infections. on the basis of a rich documentary material and investigation of numerous conjunctival smears from patients with various diseases. An attempt is made to classify these infections.

700.- A.DEREVICI, D.SARATEANU, AL.BRONITKI, M.GRUIA, AL.PETRESCU. The effect of a native drug (Bioveget) based on biogenetic stimulators of plant origin. Works of the Second Session of the Medico-Pharmaceutical Institute, Bucharest, 1956, 92.

Wishing to give a practical application to Filatov's conception on the production of biogenetic stimulators in the dying tissues, a drug was prepared from alfalfa, based on these stimulators. The product, Bioveget, was experimented with in various clinics on adults and infants.

After administration, a stimulation of the vegetative system was observed, an increase of appetite, body weight and pace of work, and in dysraphic children an increase of intellectual and body weight.

Tit. = G. MARINESCU, A. ISBASESCU, A. GARIBALDI. Vitamin C content of the cerebro-spinal fluid and nervous system in the course of infectious diseases. C.R. Acad. Sci., 1957, 245, 1980.

Determination of vitamin C in the cerebro-spinal fluid and nervous tissue of the cortico-frontal region in the course of various affections with variable nervous manifestations (50 cases) revealed a considerable decrease in the local value of this vitamin.

A dissociation was observed between the albuminorachia value, reflecting hyper-permeability of the capillary membrane, and the local content in ascorbic acid.

In all the cases, except for a case of cerebral tumor, decrease in the ascorbic acid content of the nervous system was accompanied by a reduction in the value of this vitamin also in the other organs, especially in the suprarenals.

The necessity of a judicious administration of massive doses of ascorbic acid, with a view to defence of the organism and local protection of the nervous system against toxic-infection is stressed.

Tit. = M. ANDREESCU, C. BABA. Biosynthesis of fructose-1,6-diphosphate. Report read at the Institute of Inframicrobiology of the R.P.R. Academy, 5 October 1959.

Discovered by Harden Young in alcoholic fermentation of certain yeasts, fructose-1,6-diphosphoric acid was prepared for the first time from inverted cane sugar and esterified with phosphoric acid under the catalytic action of enzymes.

This ester, of chief importance in the determination of certain aldolase activity - aldolase test - in the course of epidemic viral hepatitis, is of particular interest to the

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clinics of infectious diseases.

Synthesis of barium 1,6 - fructose diphosphate was obtained by direct esterification of fructose under the action of specific enzymes, obtained from brewer's yeast; thus inversion of cane sugar and phosphorylation of the resulting dextrose is avoided.

Esterification was done with a disodic phosphate mixture (0.25 M) and monopotassic phosphate (0.1 M) at 37°C, up to complete binding of all the phosphorus available (3 hrs); the ester is sterilized with barium salt (acetate).

The active value of the preparation was determined by a method proposed by the authors, using as standard, "standard" fructose diphosphate and as specific tests aldolase catalysis and 2 - 4 dinitro-phenyl-hydrazin staining. The indirect method for the determination of fructose -1, 6-phosphate cannot be applied to the biologic product, because of its content in primary esters (phosphates)

This synthesis procedure guarantees an output of 33% calculated in fructose pure barium diphosphate; from cane sugar only 10.8 % is obtained.

703.- R.PORTOCALA, I.SAMUEL, G.TIRNOVEANU. On the presence of cytomegalic inclusions in the sub-maxillary glands of the new-born infant. Report read at the Second Congress of Hungarian Microbiologists, Budapest, 22 Sept. 1959.

The presence of intranuclear cytomegalic inclusions was observed within the strongly hypertrophied cells of the sub-maxillary glands in 4 out of 32 new-born infants, that died from various affections. The ratio of positive cases in this study is 12.5%, which agrees with the results obtained by other authors.

This paper purposes to report for the first time the presence in our country of the disease with cytomegalic inclusions in new - born infants.

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Varia

704.- I.ADERCA. Recent investigations on measles virus. Microbiol., parazitol., epidemiol., 1959, 4, 6, 481.

The author reviews the data in literature concerning the isolation and cultivation of the causal agent of measles in embryonated eggs, animals (monkey) and especially cell cultures in vitro.

The works of Enders, Milovanovic, Melnick and Ruckle regarding the susceptibility of various types of cell cultures and the characters of the cytopathic effect produced by the measles virus in these cultures, are described.

The author likewise reviews the main works dealing with serologic tests in measles, especially complement fixation using as antigen the measles virus grown in cell cultures.

705.- D.SARATEANU. Laboratory diagnosis of infectious mononucleosis. Microbiol., parazitol., epidemiol., 1959, 4, 2, 175.

The laboratory methods applied for the serologic diagnosis of infectious mononucleosis are described, as well as the presumptive tests and the quantitative and qualitative methods currently used. Appraisal and interpretation of the serologic results is another aspect discussed.

706.- G.BALMUS, I.SAMUEL, L.MIRZA, T.ENACHE. Investigations on a severe epizootic due to paracolebactrum in suckling laboratory rats. Microbiol., parazitol., epidemiol. 1960, 5, 445; Acta Virol., Ung. 1960, 7, 2, 187.

The authors describe the symptoms, histopathological lesions, pathogenesis and treatment of a spontaneous, severe epizootic caused by Paracolebactrum intermedium in suckling laboratory rats.

Since the paracolebactrum group with the exception of the Arizona and Ballerup-Bethesda types are considered to be non-pathogenic, or very slightly pathogenic, it may be

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assumed that the cold endured by the animals during transport and their young age interfered in the production mechanism of this infection. These factors promote changes in the animal's reactivity, permitting the development of the virulence of the virus, which passed beyond the intestinal barrier and caused septicemic infection.

Certain sulphonamides and antibiotics of the tetracycline group, administered in the food of the animals, brought the epizootic to an end in a few days.

707. = T. HUNG, N. DRAGANESCU. Experimental investigations in Molluscum contagiosum. St. cerc. inframicrobiol., 1960, 11, 2, 293.

Inoculation of a non-filtered suspension of Molluscum contagiosum into the chorio-allantoic membrane of 9 days embryonated eggs, induced microscopic proliferation and intense stratification of ectodermal cells, with an aspect of invagination into the mesoderm.

Intense histiocytic proliferative lesions and slight lymphomononuclear infiltrations, are observed in the mesoderm.

Within the cytoplasm of the ectodermal cells, the presence of eosinophil formations surrounded by a halo and varied in number and size, is noted. Here and there these formations present a non-homogenous aspect.

Intracerebral inoculation to 250-300 gm young rabbits induces, only at the first passage, inflammatory lesions in the choroid plexus and the wall of the 3rd ventricle. Within the neurons of the cerebral parenchyma, the presence of granular clusters is observed, suggesting the aspect of elementary bodies that push the cellular nucleus towards the periphery.

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708. ACAD. ST. S. NICOLIU, R. PORTOCALA. Recent Soviet investigations in the field of inframicrobiology. St. cerc. inframicrobiol., 1960, 11, 2, 317.

The present paper is a synthesis of the main Soviet achievements in inframicrobiology. After expounding the evolution of inframicrobiology in the Soviet Union, the authors briefly describe investigations in poliomyelitis, encephalitis, epidemic hepatitis and influenza, viral diseases to which Soviet discoveries have brought important theoretical and practical contributions, such as the results obtained in anti-poliomyelitis and anti-influenza vaccination, histopathologic and experimental observations in epidemic hepatitis and encephalitis.

709. G. DANESCU-POPESCU. The action of vitamine C on the cultivation of certain viruses in chick embryonated eggs. St. cerc. inframicrobiol., 1960, 11, 3, 401.

A series of investigations were carried out concerning the influence of vitamin C on virus cultures (influenza, vaccinia, avian diphteria-variola, mumps and avian pseudo-pest viruses in chick embryonated eggs.

The results of the experiments showed that vitamin C in 0.005 gm amounts favours multiplication of the viruses studied in the chick embryonated egg, while in smaller dose it prevents to a certain extent development of the vaccinia and avian diphtero-variola viruses.

The favourable action of Na ascorbate on virus multiplication suggests its eventual use in the preparation of viral antigens.

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710.- ACAD.ST.S.NICOLAU. Metallized vaccines. A new method for the preparation of attenuated vaccines against rabies, tick-borne encephalitis, herpes, influenza and ornithosis. St. cerc. inframicrobiol., 1960, 11, 4, 489; Arch. f. exp. vet.Med. 1961, 15, 349.

Our metallized vaccines, obtained with heavy metal ions, open up we believe a new road to the preparation of attenuated antiviral vaccines.

The immunogenic activity of the antirabies vaccine prepared with 1:5:1,000 silver nitrate is very intense, both in laboratory mice and rabbits. By elimination of the excess metallic ions from the metallized vaccine, an antirabies vaccine was obtained more active than that of Fermi, and which maintains its activity during at least 3 months. The virus, in the "silvered" antirabies vaccine is submitted to an irreversible attenuation.

This same vaccine, prepared with the radioactive silver salt ($\text{Ag}^{110}\text{NO}_3$), permits study of the migration of the virus vaccine in the organism of the animal and of the mechanism of tissular immunization characterizing viral diseases.

The tick-borne spring-summer encephalitis virus in the brain triturate obtained from mice which died of the experimental disease, suspended in a 1:5:1,000 AgNO_3 solution and maintained 44 hours at 37°C , is transformed into an anti-encephalitis vaccine which immunizes mice against the homologous virus. The metallized anti-encephalitis vaccine is much more efficient than the formolised vaccine.

Comparing the immunogenic activity of the fresh formolised vaccine with that of the silvered vaccine, stored even 120 days at $+44^\circ\text{C}$, the evident superiority of the latter may be seen.

We were able to demonstrate the powerful immunizing action of the silvered antiherpes-vaccine. This vaccine was prepared with 1/10 cerebral substance from mice which had died of experimental herpes encephalitis, or with the fluid of in vitro cultures of the herpes virus on human embryo cells. The best concentration of silver salts for these vaccines was 0,25:1,000 silver nitrate. The silvered vaccine prepared with in

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vitro cultivated virus is more active than that prepared from the cerebral substance of mice which died of experimental herpes encephalitis.

The anti-influenza vaccine prepared from the allantoic fluid of embryonated egg cultures and containing 0.5:1,000 silver nitrate, administered by peritoneal, intramuscular, subcutaneous or intranasal route, immunizes mice against the fresh virus inoculated by intranasal route. However, the maximum activity of the silvered anti-influenza vaccine is obtained when the animals are immunized by intraperitoneal route.

The silvered anti-ornithosis vaccine possesses a manifest immunogenic potential. The 3:1,000 or 4:1,000 silvered vaccine prepared with lung suspension from mice which died of experimental ornithosis, immunizes very well the mice to which it was administered in 2 intramuscular injections or once by intranasal route. This vaccine, more active than those prepared from virus cultures on embryonated eggs or from cultures carried out according to the Shindarov method (in vivo and then in vitro), is likewise much more efficient than the formolised vaccine.

Just as active as the silvered antirabies vaccine is the coppered antirabies vaccine. The brain triturate, obtained from a rabbit which died of fixed virus rabies, suspended in a 0.6:1,000 copper nitrate or 0.5:1,000 copper chloride, becomes a very active vaccine. The 0.5:1,000 copper chloride antirabies vaccine appears to be more active than the 0.6:1,000 copper nitrate vaccine. The latter, however, maintained its immunizing properties for mice a longer period of time.

711.- A.DEREVICI, AL.PETRESCU, P.ATHANASIU. Associated anti-toxic, antimicrobial and antiviral vaccinations. (Experimental investigations). St.cerc.inframicrobiol., 1960, 11, 4, 563.

It was observed that mice immunized with a complex diphthero-tetanus-poliomyelitis-influenza vaccine, present complete resistance to the challenge infection with the influenza or poliomyelitis virus and in a lesser degree to inocu-

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lation with diphtheria or tetanus toxin. Guinea pigs immunized with the associated diphtheria-tetanus-pertussis-influenza vaccine present complete resistance to inoculation with diphtheria or tetanus toxin and medium antiinfluenza HAI antibody titers, lower than those of guinea pigs immunized only with the antiinfluenza vaccine.

The experimental results confirm the findings of other authors on the slight antidiphtheria and antitetanic immunization of the mouse and the fact that serum antiinfluenza HAI antibody titers do not tally with the degree of resistance to virus inoculation, therefore to the degree of immunity proper. Vaccination with the complex diphthero-tetano-pertussis-influenza vaccine induces a good immunity against diphtheric and tetanic toxin, poliomyelitis and influenza viruses.

712.- A.DEREVIČI, C.SATMARI, AL.PETRESCU, P.ATHANASIU, I.POPA,

C.HONDOR. Associated antimicrobial and antiviral vaccination to volunteers. Serologic and epidemiologic data.

Microbiol., parazitol., epidemiol., 1960, 4, 323.

The authors present the serologic and epidemiologic results of associated vaccination to volunteers, showing that the best results are obtained with simultaneous administration of TAB and antiinfluenza vaccines. The results are not so good when the two vaccines are administered at different intervals.

713.- O.MITROIU, G.BALMUS, M.ANDREESCU, M.POPA. Serum aldolase modifications in rabbits with alloxan-induced diabetes.

Conference on Hepatitis, October 21-23, 1960.

The investigations had in view appraisal of the serum aldolase test in rabbits with alloxan-induced diabetes. The results obtained showed increased aldolasemia values, probably due to an abnormal accumulation following destruction and hyperpermeabilization of the cells damaged by alloxan, on the one hand, and on the other, the fact that aldolase is not used in the process of tissular glycolysis.

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714.- AL.PETRESCU, P.ATHANASIU, S.CIRNARU. Hepatic morphologic lesions caused by a viral agent isolated from infants with an acute toxic respiratory syndrome. Interregional. Conference on epidemic hepatitis. Sinaia, October 21-22, 1960.

A description is given of the lesions induced by this viral agent at the level of the liver: diffuse and nodular infiltrations with lympho-monocytes, hepatocytophage processes, lesions of the hepatocytes, fatty charging of the protoplasm and pycnotic alteration up to lysis of the nuclei.

715.- N.CAJAL, O.BURDUCEA, S.MATEESCU, G.MARINESCU, M.CE-
PLEANU, Y.COPELOVICI. The evolution of some experimental viral diseases (influenza, poliomyelitis, Coxsackie, rabies, herpes) under the action of radioactive phosphorus and iodine (P^{32} and I^{131}). Acta.Virol. Ung.1960, 2, 2, 181; St. cerc. inframicrobiol., 1961, 12, 1, 29; Excerpta Medica 1961, Sect.IV, 14, 12, 3516.

Experiments with the influenza, Coxsackie, poliomyelitis, rabies and herpes virus, in adult white mice exposed to the action of gamma and beta radiations emitted by P^{32} and I^{131} showed that increase in the sensitivity of the animals to the pathogenic action of the viruses tested is obtained under the effect of these radiations.

Under the action of internal radiations, some viruses - as for instance poliovirus type II ($M.F_1$) may realize the experimental infection also after inoculation by routes other than the selective one (peritoneal and subcutaneous). Moreover, the Coxsackie virus (A_2), non-pathogenous for the adult white mouse, induces under the action of radioactive phosphorus and iodine a high proportion of lethal paralytic cases.

The results obtained are explained by lowering of the animal's resistance, a true "irradiation disease", developing due to diminution of serum properdin and cellular metabolic alterations that favour the mechanism of viral multiplication.

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The increase of the radioactivity threshold in nature is assumed to influence morbidity from viral diseases and the appearance of new and severe viral affections.

716.- R.PORTOCALA, I.SAMUEL, G.TIRNOVEANU. Presence of cytomegalic inclusions in the submaxillary glands of the newborn. Acta Virol. Ung. 1960, 2, 2, 188; Probleme de Morfopatologie. 1961, IIInd vol., 265.

In the submaxillary glands of 4 out of 32 new-born children who died of various affections, the presence of intranuclear cytomegalic inclusions was found within the hypertrophic cells. Their incidence is similar to that observed in other countries. Their presence points to the existence in our country of a disease with cytomegalic inclusions, that has been detected until now only by histologic examinations.

717.- N.CAJAL, O.BURDUCEA, M.ANDREESCU. Study of the value of serum properdine under the action of radiophosphorus (P^{32}) and radioiodine (I^{131}). St. cerc.inframicrobiol., 1961, 12. 3, 297.

Internal gamma and beta irradiation with P^{32} and I^{131} brought about in the white rat an obvious decrease in serum properdine. This decrease occurs 24 hours after administration of the radioactive substances and reaches a maximum after 4 days.

The experiments carried out also demonstrated the role of properdine, in nonspecific antiviral resistance.

718.- G.MARINESCU, Z.MARGARIT. An adenohyperallergic form of infectious mononucleosis. Spitalul 1961, 3, 280.

Infectious mononucleosis, owing to its pantropism, takes on a great number of clinical forms. An extremely painful clinical form with adenopathy is described.

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719. G. MARINESCU, A.M. STROESCU. Vesiculo-apthous stomatitis. Contributions to the etiologic and clinical study. Report read at the Society of Medical Sciences, December 7, 1961.

From an epidemic focus of vesiculous stomatitis in a day nursery, affecting 16 children, Coxsackie virus group B was isolated and identified by histopathologic and serologic investigations.

- 720.- G. MARINESCU, I. MICHEL. On the value of the presence of giant cells in rhinopharyngeal smears for the early diagnosis of measles. The 3rd Congress of the Czechoslovakian microbiologists on respiratory viral diseases, May 1961.

The frequency of giant cells in 1,798 rhinopharyngeal smears, from 104 measles cases, was studied in various phases of the disease.

The presence of giant cells was confirmed in 60 per cent of the cases towards the end of the incubation period; 75 per cent in the invasion period and 58 per cent at the beginning of the eruption; it then progressively decreases to 9.4 per cent in the 4th day of the rash, with significantly altered cells. Giant cells were found in a single case among the control group (33 healthy children or children with various catarrhal rhinopharyngeal affections).

- 721.- O. MITROIU, C. BARBU, M. POPA, O. SFERDEANU. Etiological and serological investigations in the course of some affections accompanied by rashes in children. St. cerc. inframicrobiol., 1961, 12, suppl., 271, Rev. Sci. Med. 1961, 6, 1-2, 65.

Etiological and serological investigations were carried out in 7 cases of atypical morbilliform eruptive fever. Attempts at virus isolation are negative after 3 passages. Serological findings, however, reveal an increase of complement-fixing adenovirus antibodies. These increases being evidence of a recent infection, they point to an adenoviral etiology.

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722.- G.MARINESCU, V.MARES. The morphopathology of respiratory viral diseases. Symposium on respiratory viral diseases, Baia Mare, September 29-30, 1961.

The authors describe the morphopathologic aspects of all viral diseases involving the respiratory tract, stressing both the points in common and the differences.

XI
Monographs
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- 1.- Recent Soviet investigations in the field of influenza, Ed. Acad. R. P. R., 1950, 82 pag., 5 tab., 25 bibliographic indications.

A monograph reviewing 25 publications by Soviet authors in the field of influenza published up to 1950.

The bibliographic material is presented at the end of each chapter concerning "I. Etiology, pathogeny, experimental study, immunology and epidemiology of influenza; II. The clinics of this affection; III. diagnostic methods; IV. prophylaxis and treatment.

- 2.- Recent Soviet investigations in the field of encephalitis, Ed. Acad. R. P. R., 1950, 78 pag., 4 tab., 20 bibliographic indications.

A monograph regarding speciality Soviet literature up to 1950. A review is made of data concerning louping ill, Russian encephalitis, Bielorussian encephalitis, Far-Eastern encephalitis, acute human encephalomyelitis, Djalarang encephalitis and equine encephalomyelitis in the U.S.S.R.

In the chapter "Experimental studies on the problem of encephalitis" mention is made of the Soviet author R. M. Schoen, who cultivated different encephalitis viruses in tumors. The work of this author regarding the latent forms of St. Louis encephalitis is likewise cited.

- 3.- ACAD. St. S. NICOLAU. Inframicrobial hepatitides, Ed. Acad. R. P. R., 1954, 76 pgs., 22 plates, 140 references.

The author, on scientific bases, synthetises his own original conception on the plurality of human hepatitides and hepatitis viruses. His modern conception is founded on the biologic transformation in nature of microbes and inframicrobes, under the influence of new environmental conditions arising due to the intervention of various factors. Thus, starting from the classical "epidemic icterus", identified as "Botkin's hepatitis" due to virus A, which caused the great epidemics during the last two wars, the authors identifies

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" the sclerogenous hepatitis " due to virus C and the " hepatitis due to the non-hemagglutinating D virus ". The natural process of transformation of viruses cannot be considered as ended and it is still to be found in full progress. Next to the above hepatitides, the author mentions the variant due to virus B " homologous serum hepatitis " or the " Sergheev and Tareev disease", casually transmitted by contaminated serum or plasma. The character of each of these types of hepatitis are analysed on the basis of the research -work of the Rumanian school of inframicrobiology and the data published in modern medical literature.

Chapter I, " Botkin's disease ", chapter II " sclerogenous inframicrobial hepatitis " and chapter III " homologous serum hepatitis ", give a brief description of the clinical and epidemiologic aspects, the results of recent investigations on the etiologic agent and the characteristics of the histopathologic lesions of each of these hepatitides.

The last chapter deals with other human and animal hepatitis viruses.

To conclude, the entire problem of inframicrobial hepatitides, as it appears in the present stage of our knowledge, is summed up in a table. This synopsis represents the results of the investigations carried out over more than 18 years by the Rumanian school of inframicrobiology.

4.- V.BABES. " Selected Works ". (published by an editing board; acad. St. S. Nicolau, M. Babeş, Fl. Horodniceanu) Ed. Acad. R.P.R., 1954, vol. 1, 640 pags.

5.- M. BABES. Bibliography of the works of Victor Babeş . Ed. Acad. R.P.R., 1954, 88 pag.

The present work is a systematic classification of Victor Babeş's 1300 publications, compiled according to the year of publication and subject matter in order to aid investigations in connection with the works of the Rumanian scientist.

An end chapter gives the most important bibliographic data in the life of Victor Babeş.

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6.- ACAD.ST.S.NICOLAU. Cancer and viruses. Some considerations on the viral hypothesis of cancer. Ed.Acad.R.P.R. 1955, 79 pag., 22 plates, 89 references.

New data are reported on the pathogenesis of tumoral processes under the influence of inframicrobial agents, lending support to the viral etiology of cancer.

The material presented is a synthesis of numerous personal investigations of the author on inframicrobial morphology and of the findings in this field of investigation published in literature up to date.

In a brief introduction the author shows that the starting point of his investigations was the presence in sclerogenous hepatitis of pseudo giant cells similar to those previously described in many other viral diseases.

In the chapter on "Cellular proliferation under the influence of inframicrobial germs" the author reviews 23 viral diseases and describes ^{by} mitotic cellular proliferation brought about in the organism the activity of inframicrobial germs.

In the latter part of the volume, the phenomenon observed is discussed and interpreted. The author believes that this property of inducing proliferation ("proliferigenous" property) in the affected tissue cells, is almost general with all viruses, since it results from their metabolic requirements, viruses growing only in live cells. The younger the cells and the more active their multiplication, the more favourable they are for virus growth.

A Russian and French translation of the Rumanian text completes the volume.

7.- A.DEREVICI. Primary viral meningitis. Ed. Med. Bucuresti 1955, 131 pag., 9 figs. IX tabs.

After a brief history of primary meningitides and an attempt at drawing up a systematic list of the diseases which can be classed among these viroses, the author describes the various clinical forms and possibilities of making a laboratory diagnosis.

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A classification according to the etiologic agent is proposed.

A description is given of experimental investigations on animals, according to the data of various authors and to personal research.

The following chapters discuss the properties of various virus strains of primary meningitis, followed by a wide description of the morpho-pathology and immunity, completed with data referring to attempts made at vaccination.

The epidemiologic data obtained in personal research, reveals the role of murine vectors, whose destruction is of paramount importance for the control of this viral disease.

The book comprises 10 chapters.

8.- ACAD.ST.S.NICOLAU. Elements of general inframicrobiology.

Ed.Acad.R.P.R., 1956, 774 pag., 520 fig., 5 plates.

After a brief introduction into the study of inframicrobiology, the author outlines this science and stresses its paramount importance in human, animal and plant pathology. He then systematically analysis on the basis of a rich documentary material the genesis of these micro-organisms and their properties studied by the most up-to-date means of investigation.

A description is given of their morphology established by various optical means, from the simple to the electron microscope, of their structure and chemical and biological composition.

In order to illustrate more clearly the particular behaviour of these germs in the human, animal or plant organism, the author describes several experimental, histopathologic and morphologic techniques, commonly applied in inframicrobiology, as well culture of viruses outside the organism, in embryonated eggs, tissue cultures and tumours, a method initiated by the author together with professor C.Levaditi.

In chapter VI, concerning the behaviour of inframicrobes in the organism, acad.St.Nicolau describes the affinity

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of viruses for certain tissues, which factually implies finding of the most favourable living conditions for the parasite germ. A description is given of the spread of viruses within the organism, the mechanism of viral infection, resolution of the conflict between inframicroorganism and the organism, the interesting results of this conflict both for the organism and for the biology of the respective germ. Thus can be explained the spontaneous transformations suffered by the inframicrobe under natural or experimentally controlled conditions.

Studying the consequences, for the organism, of viral infection, the author describes the alterations that take place in the cells and tissues under the action of various inframicrobes, laying particular stress on cellular inclusions and their significance, accepted to-day by all research workers.

9.- ACAD. ST. S. NICOLAU. Inframicrobial infectious hepatitides.
Ed. Acad. R.P.R. 1957, 73 pag., 188 references.

The author studies in detail the 4 human viral infectious hepatitis strains, which he designates as different nosologic entities; Botkin's hepatitis (viral epidemic hepatitis), sclerogenous hepatitis, non-hemagglutinating virus hepatitis and homologous serum hepatitis (serum hepatitis or Sergheev-Tarseev's disease).

Arthropod-borne human and animal hepatitides and animal hepatitis are likewise reviewed. On the basis of the 15 years investigations of the Rumanian School of Inframicrobiology concerning viral epidemic hepatitides, briefly related in the work, the author sustains the plurality of viral hepatitides, nosologic entities that differ from the etiologic view point, and draws up a provisional systematization.

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10.- N. CAJAL. Laboratory diagnosis of human viral diseases.

Ed. Acad.-R.P.R., 1958, 585 pages, 117 figs.

The first part comprises nine chapters in which are expounded, on the basis of data in literature and the author's experience, the general methods applied in the diagnosis of viral diseases (the utility of virologic laboratory, collecting and transport of infectious material, techniques for the isolation and identification of viruses in laboratory animals, embryonated eggs and cell cultures, storage of virus techniques, for microscopic examination of viruses and specific histopathologic alterations, serologic tests, cross immunity, anaphylactic reaction etc.), and in the second part (7 chapters) diagnostic possibilities in the most important human viral diseases (eruptive viral diseases, neuroviral diseases, pulmonary viral diseases, lymphoviral diseases, epidemic hepatitis, venereal and ocular viral diseases).

Numerous original techniques devised in the Institute of Inframicrobiology of the R.P.R. Academy, are described, and in each chapter a series of diagnosis techniques, listed according to their importance, synopsis and partial and general conclusions are given.

Next to a rich bibliography there are also 117 drawings and original photos, which suggestively complete the text.

11.- A. DEREVICI. " Influenza " - various aspects of the problem.

Biblioteca Medicală X., Ed. Acad. R.P.R. 1958, 472 p., 156 figs.

This volume is divided into three parts:

1. Data on the micro-organism.
2. Inter-relations between the host cells and the virus.
3. Data on the macro-organism.

The first part of the book gives data on the classification, chemical composition and biologic structure of the influenza virus, data on toxigenesis, spontaneous and directed variability, as well as multiplication in synergic and antagonistic conditions.

In the chapters of the second part, the relations

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between the macro- and micro-organism are established, describing the elements that stand at the basis of the reactivity of the body and the component elements of this reactivity, stressing its nervous histo-physiologic substrate.

The importance of I.P.Pavlov's nervist conception is emphasized.

In the third part, the various clinical forms are described; stress is laid on the histopathologic modifications, determined by toxic properties of the influenza virus and the toxi-allergic character of influenza.

The mechanism of the establishment of immunity is investigated, mention being made of the various factors which intervene in immunogenesis.

A detailed analysis of the various types of vaccines and their application is given in the chapter on anti-influenza prophylaxis; the problem of non-specific prophylaxis is likewise treated in detail.

This work is a synthesis of the anti-influenza campaign in the R.P.R., headed by the staff of the Institute of Inframicrobiology of the R.P.R. Academy, in collaboration with the Ministry of Health and Social Welfare, the sanitary units in the country and especially with the Sanitary Anti-epidemic network in the towns of Jassy, Bucharest, Galatzi, Braşov, Cluj, Tg. Mureş, Timişoara and Bacău.

The results obtained in small groups of persons vaccinated with a vaccine prepared in the Institute of Inframicrobiology demonstrated the value of mass prophylaxis.

Several proposals are made at the end of the monograph, for the organization of anti-influenza prophylaxis.

12.- I.GHEORGHIU, S.MIHAILA, V.TOMESCU, I.MARINESCU, P.ONCIOIU, N.POPA. Swine plague. Ed. Acad.R.P.R., 1958. 299 pages, 28 figs 8 tables, 516 references.

This monograph is a comprehensive study of swine plague,

The first chapter deals with the biology of the pathogenic agent, stressing its relationship with other viruses or associa-

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ted microbial flora, its multiplication and sensitivity to physical, chemical and biologic agents. An important part of this chapter is dedicated to controlled transformation of the characters of the swine plague virus by means of its cultivation in other animal species. The chapters on the clinical, anatomopathologic and diagnostic study of the disease are richly illustrated by the personal observations of the authors. The illustrations accompanying these chapters show the clinical evolution of the disease, which is often polymorphous and the anatomopathologic modifications resulting from the action of the virus or that of the virus associated to secondary germs.

The study of immunity and specific prophylaxis is widely developed and contains many details on the preparation, properties and use of the biologic anti-swine plague products.

The chapter on general prophylaxis discussed the epizootologic viewpoint and gives helpful indications for the prevention and control of this virus disease, particularly in the breeding conditions in our country.

13.- V.BABES, " Selected works " (Published by an editing board: acad.St.S.Nicolau, M.Babes, Fl.Horodniceanu) Ed.Acad.R.P.R., vol.II, 1959, 896 pages.

14.- A.GRINTESCU, C.IACOB. Diseases transmissible from animal to man. Ed. Acad.R.P.R., 1959, 489 pags., 85 figs., 4 plates.

A monographic study on specific animal diseases to which man is also receptive, diseases currently named zoonoses. Besides several viral and bacterial diseases listed under this designation, all animal diseases of viral and bacterial origin, as well as mycoses and parasitoses that threaten human communities, are dealt with.

The subject matter is divided according to the causal agent, and in the introduction general considerations are made on the role of natural foci, on the common sources of infection and infestation, on epizootologic and epidemiologic characte-

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ristics, as well as on the principles that stand at the basis of the prophylaxis of these diseases.

15.- G.MARINESCU. Acute infectious lymphocytosis and infectious mononucleosis. Ed.Med. 1960, 309 pag., 40 fig.

New data are brought concerning these two diseases little known as yet in our country. They have been described together in view of the marked tropism of their causal agents, probably viruses, for the reticulo-endothelial and lymphatic systems throughout the whole organism. This is mentioned in a brief introduction after which each of these affections is dealt with in detail.

Each chapter is of a corresponding didactic and scientific length, stressing in acute infectious lymphocytosis, the etiopathogeny which is still under discussion and hematologic alterations, that play a principal role in establishing the diagnosis. The chapter on infectious mononucleosis deals especially with the multiple clinical forms and the possibilities of an early diagnosis.

The book is illustrated by many figures and a rich bibliography (2000 references), comprising the original works of the author, the contribution of Rumanian investigators and specialty publications in the last 10 to 15 years.

16.- V.TOMESCU, I.GHEORGHIU, I.ISOPESCU. Foot and mouth disease. Ed.ACad. R.P.R., 1960, 409, pag., 85 fig.

The book presents the newest data in world literature, the contribution of Rumanian investigators and of the authors to the main problems that stand at the basis of our knowledge and the control of this terrible disease.

The following chapters come after the introduction and the history: Study of the etiologic agent, Receptivity. Experimental infection, Pathogenesis, Epizootology, Clinical study, Anatomic-pathologic study, Diagnosis, Prognosis, Immunity and Prophylaxis. Particular attention is paid to the physical and chemical properties of the virus, citing data from world literature and especially the works of the Rumanian scien-

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tists Levaditi and Nicolau.

Study of the plurality and variability of the foot and mouth disease virus is founded upon the initial works of Vallée, Carré, Waldmann and Trautwein and the new publications of the Soviet authors Kindiakov, Baladinov, etc.

Description of virus type determinations begin with the method introduced by the Rumanian investigator Prof. Al. CIUCA in 1929, complement fixation and the modern methods of sero-neutralization in tissue cultures.

In specific prophylaxis, the authors discuss in detail the preparation of sera and vaccines according to various methods, and likewise show their own contribution to the preparation of the vaccine done for the first time in our country and which led to eradication of the 1959-1960 epizootic.

17.- V. BABES. " Selected works ". vol. III (under the case of an editorial board. Acad. St. Nicolau, M. Babes. G. Marinescu) Ed. Acad. R. P. R., 1961, 278 pag.

18.- ACAD. ST. S. NICOLAU ACAD. AL. RADULESCU, N. M. CONSTANTINESCU, N. CAJAL, G. MARINESCU. Poliomyelitis Ed. Acad. R. P. R. 1961, 771 pag., 400 figs.

POLIOMYELITIS is written at a high scientific level, under excellent editorial conditions, and presents the latest data concerning one the most important and actual problems in medicine. The twelve chapters of the book deal with the disease completely and are up to date with all the aspects of this affection, which has preoccupied investigators for almost two centuries.

Chapter I gives general indications on the etiology, immunity and prophylaxis of the disease. Chapter II shows the epidemiologic aspects, pointing to the main epidemiologic factors, the contagiousness of the disease, its mode of propagation and sources of infection, and particularly its evolution in our country. Chapter III is a detailed study of the causal agent and deals with its morphology and chemical constitution as well as with the reaction of the virus to various chemical and physical agents, cultivation of the virus especially in tissue culture, study of different virus strains, etc.

Chapter IV reviews numerous investigations regarding

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experimental reproduction of the disease in monkeys, murines and other animal species. Chapter V relates the investigations linked to the physiopathology of poliomyelitis, and chapter VI is concerned with the nonspecific factors that influence the clinical evolution of the disease. In Chapter VII there is a detailed study of the lesions produced by polioviruses in different organs.

Chapter VIII presents the most up to date investigations and the newest methods for isolation of the virus, preparation of type immune sera, virus identification. In Chapter IX the authors deal with problems of antipolio immunity, both active and passive, paraimmunity and interference in poliomyelitis, data of exceptional interest from the practical standpoint.

Chapter X comprises specific prophylaxis by means of antipoliomyelitis vaccination. Chapter XI describes in detail the symptomatology of the disease in all its phases of evolution, the clinical forms, respiratory imbalance syndromes in the course of the disease, complications, positive and differential diagnosis, prognosis and methods of treatment. Finally, Chapter XII is an ample study of the period of sequelae.

POLIOMYELITIS is also a review of specialty scientific literature from abroad and that of the Rumanian investigators and clinicians. The exceptional contribution of the Soviet School in solving the different aspects of poliomyelitis and particularly the success obtained by Soviet scientists with the antipolio vaccine are also described.

POLIOMYELITIS is useful both for specialists in this problem and for doctors specialized in other fields.

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